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The COELESTIAL ATLAS;

OR, A NEW

E P H E M E R I S

For the YEAR of our LORD 1784.

Being the

BISSEXTILE, or LEAP-YEAR.

Wherein are contained

The Heliocentrick and Geocentrick Places of the Planets, the ECLIPSES of the Luminaries, and other remarkable PHENOMENA that will happen this Year.

Carefully computed

From the genuine TABLES of Dr. EDMUND HALLEY, those of Professor MAYER, and other the latest and most correct ASTRONOMICAL TABLES.

ALSO

A Compleat ALMANACK, containing the FEASTS and FASTS of the Church of ENGLAND; the Times of the LUNATIONS; the Rising and Setting of the Sun, Moon, and Planets, &c.

Adapted to the

Meridian and Latitude of the ancient and honourable CITY of LONDON.

To which are

Several useful TABLES: AS, of the Sun's semi-diurnal Arcs, by which the Sun's Rising and Setting may be known by Inspection; the Day in the Year, and in any Part of GREAT-BITAINE; a TIDE-TABLE, and a very correct one of the Eclipses of JUPITER's first Satellites; a TABLE of the Sun's Right-Ascension; various exact TABLES of the most remarkable fixed Stars, taken from Mr. FLAMSTEED's Catalogue; and, lastly, with a TABLE of Latitudes and Longitudes of the most remarkable Places in the World.

By ROBERT WHITE,
Teacher of the Mathematicks.

Οι ἀνατολὶς ἀνιστῶνται δόξαν Θεῷ.

The THIRTY-FIFTH IMPRESSION.

L O N D O N:

Printed for the Company of STATIONERS; and sold by JOHN WILKIE, at their Hall, in Ludgate-street.

[Price NINE-PENCE stitched.]

Ephemerides. N.

Chronological Notes for the Year 1784.

Golden Number	- - 18	Septuagesima Sunday	Feb. 8
Cycle of the Sun	- - 1	Shrove Sunday	Feb. 22
The Epact	- - 7	Easter Day	April 11
Dominical Letters	- - D C	Whit-Sunday	May 30
Number of Direction	- 21	Trinity Sunday	June 6
Roman Indiction	- - 2	Advent Sunday	Nov. 28

Astronomical CHARACTERS explained.

♈ Aries	♋ Cancer	♎ Libra	♏ Capricorn
♉ Taurus	♌ Leo	♍ Scorpio	♐ Aquarius
♊ Gemini	♍ Virgo	♎ Sagittary	♑ Pisces
♄ Saturn	☉ Sol (the Sun)	☾ Luna (the Moon)	☿ Tellus,
♃ Jupiter	♀ Venus	♊ Moon's N. Node	Terra (or
♂ Mars	☿ Mercury	♋ her S. Node	the Earth)
♌ Conjunction when Planets are in the same Sign, Deg. Min. &c.			
* Sextile when 2 Signs dist.		Δ Trine when 4 Signs dist.	
□ Quartile when 3 Signs dist.		♌ Opposition when 6 Signs dist.	

Of the Four Quarters of the YEAR 1784.

THE Spring Quarter begins on the 19th Day of March, at 46 Minutes past 10 at Night, apparent Time.

The Summer Quarter begins June the 20th, 49 Minutes past 8 at Night.

The Autumnal Quarter begins September the 22d, 29 Minutes past 9 in the Morning.

The Winter Quarter begins December the 21st, 58 Minutes past 2 in the Morning.

THE beautiful Planet VENUS will be a Morning Star 'till August the 8th; and after that Time she will be an Evening Star to the Year's End.

JUPITER will be a Morning Star from the 3d Day of February 'till August the 25th, at which Time he becomes an Evening Star; and so continues to the Year's End.

The NAMES of the Learned JUDGES of the LAW.

I. The Lords Commissioners of the Great Seal, Right Hon. Lord Loughborough; Sir Wm. Ashurst, Knt. Sir Beaumont Hotham, Knt.

Right Honourable Sir Thomas Sewell, Knt. Master of the Rolls.

II. In the } R. H. Wm. Earl Mansfield, L. C. J. Edward Willes, Esq;
K. Bench. } Sir W. H. Ashurst, Knt. Francis Buller, Esq;

III. In the } R. H. Alex. Lord Loughborough, L. C. J. Sir Henry Gould, Knt.
C. Pleas. } Sir George Nares, Knt. John Heath, Esq;

IV. In the } Sir John Skynner, Knt. L. C. B. Sir James Eyre, Knt.
Exchequer } Sir Beaumont Hotham, Knt. Sir Richard Perryn, Knt.

James Wallace, Esq; Attorney General; John Lee, Esq; Solic. General.

A TABLE of TERMS and their RETURNS.

Hilary Term begins Jan. 23, ends Feb. 12.

Returns or Essoign-days.	Exc	Ret.	Ap.	W. D.
In eight Days of St. Hilary, - - Jan. 20	21	22	23	Friday.
From the Day of St. Hilary in 15 Days - 27	28	29	30	Friday.
On the Morrow of the Purif. Blessed Mary, Feb. 3	4	5	6	Friday.
In eight Days of the Purif. of Blessed Mary, - 9	10	11	12	Thursd.

Easter Term begins April 28, ends May 24.

Returns or Essoign-days.	Exc	Ret.	Ap.	W. D.
From the Day of Easter in 15 Days, - April 25	26	27	28	Wedn.
From the Day of Easter in 3 Weeks, - May 2	3	4	5	Wedn.
From the Day of Easter in 1 Month, - - 9	10	11	12	Wedn.
From the Day of Easter in 5 Weeks, - 16	17	18	19	Wedn.
On the Morrow of the Ascension, - - - 21	22	23	24	Monday

Trinity Term begins June 11, ends June 30.

Returns or Essoign-days.	Exc	Ret.	Ap.	W. D.
On the Morrow of the Holy Trinity, - June 7	8	9	11	Friday.
In 8 Days of the Holy Trinity, - - - 13	14	15	16	Wedn.
In 15 Days of the Holy Trinity, - - - 20	21	22	23	Wedn.
In 3 Weeks of the Holy Trinity, - - - 27	28	29	30	Wedn.

Michaelmas Term begins Nov. 6, ends Nov. 29.

Returns or Essoign-days.	Exc	Ret.	Ap.	W. D.
On the Morrow of All Souls, - - - Nov. 3	4	5	6	Saturd.
On the Morrow of St. Martin, - - - 12	13	14	15	Monday
In eight Days of St. Martin, - - - 18	19	20	22	Monday
In 15 Days of St. Martin, - - - 25	26	27	29	Monday

N. B. No Sittings in Westminster-Hall on Ascension-day, Midsummer-day, and the 2d of February.

The Exchequer opens eight Days before any Term begins, except Trinity, before which it opens but four Days.

Note, That the first and last Days of every Term, are the Days of Appearance.

BIRTH-DAYS of the ROYAL FAMILY.

KING GEORGE III. June 4, 1738	Prince Adolph. Fred. Feb. 24, 1774
Prince of Wales, Aug. 12, 1762	Princess Mary, April 25, - 1776
Prince Frederick, Aug. 16, 1763	Princess Sophia, Nov. 3, - 1777
Prince Wm. Henry, Aug. 21, 1765	Princess Amelia, Aug. 7, - 1783
Prs. Cha. Aug. Mat. Sept. 29, 1766	Queen Charlotte, May 19, 1744
Prince Edward, Nov. 2, - 1767	Prs. Amelia, June 10, - 1711
Prs. Augusta Sophia, Nov. 8, 1768	Prs. Augusta of Brun. Aug. 11, 1737
Prs. Elizabeth, May 22, - 1770	Duke of Gloucester, Nov. 25, 1743
Prince Ernest Augustus, June 5, 1771	Duke of Cumberland, Nov. 7, 1745
Prince Aug. Fred. Jan. 27, 1773	

SOVEREIGNS of EUROPE, their Accession, &c.

Kingdoms, &c.	To whom subject.	When born.	Began to reign.
England, &c.	George III.	June 4, 1738	Oct. 25, 1760
France	Lewis XVI.	Aug. 23, 1754	May 10, 1774
Russia	Catharine II.	May 2, 1729	July 9, 1762
Spain	Charles III.	Jan. 20, 1716	Aug. 10, 1759
Portugal	Mary	Dec. 7, 1734	Feb. 24, 1777
Prussia	Frederic III.	Jan. 24, 1712	May 20, 1740
Denmark & Norway	Christian VII.	Jan. 29, 1749	Jan. 14, 1766
Sweden	Gustavus III.	Jan. 24, 1746	Feb. 13, 1771
Germany	Joseph	Mar. 13, 1741	Aug. 18, 1765
Poland	Stanislaus III.	Jan. 17, 1732	Nov. 25, 1764
Holland	William V.	March 8, 1748	Oct. 11, 1751
Papedom	Pius VI.	Dec. 27, 1717	Feb. 18, 1775
Sardinia	Victor	June 26, 1726	Mar. 20, 1773
Ottoman Empire	Achmet IV.	Nov. 5, 1719	Jan. 21, 1774

The FULL WEIGHT of the Coins, with the LEAST WEIGHT allowed to pass of the Gold Coin.

GOLD.		Wt. allowed.	Full Wt.	SILVER.		Full Wt.
		dwt. gr.	dwt. gr.			dwt. gr.
Guinea,	- -	5 8	5 9 ³ / ₄	A Crown,	- -	19 8 ¹ / ₂
Half Guinea,	- -	2 16	2 16 ⁶ / ₄	Half Crown,	- -	9 16 ³ / ₄
Quarter Guinea,	1 8	1 8 ³ / ₄	1 8 ³ / ₄	Shilling,	- -	3 20 ² / ₄
				Six Pence,	- -	1 22 ¹ / ₄

According to the above proportions it appears, that the value of a lb. of silver is 62s. or 3l. 2s. and of a lb. of gold is 44¹/₄ guineas, or 46l. 14s. 6d. Also that the oz. of silver is 5s. 2d. and the oz. of gold 3l. 17s. 10¹/₂d. So that the value of the standard gold is 15 times that of the silver, and 1-14th more.

A TABLE of the **KINGS** and **QUEENS** of **ENGLAND** since
the **CONQUEST**.

Kings and Queens	Born A.D.	Began their Reign	Reigned Y. M. D.	> or =	Rem. Deaths and Dethroned	Where buried
Will. Conq.	1027	1066 Oct. 14	20 10 26	60	Burst by Leap.	Caen, Norm
Will. Rufus	1057	1087 Sept. 9	12 10 24	43	Slain acciden- tally.	Winchester
Henry I.	1068	1100 Aug. 2	35 3 29	77		Reading
Stephen	1105	1135 Dec. 1	18 10 24	49		Feverham
Henry II.	1133	1154 Oct. 25	34 8 11	55		Fonteveraud
Richard I.	1156	1189 July 6	9 9 0	43	Slain with an Arrow.	Fonteveraud
John	1165	1199 April 6	17 6 13	50		Worcester
Henry III.	1207	1216 Oct. 19	56 0 28	65		Westminster
Edward I.	1239	1272 Nov. 16	34 7 21	67		Westminster
Edward II.	1284	1307 July 7	19 6 18	43		Gloucester
Edward III.	1312	1327 Jan. 25	50 4 27	65		Westminster
Richard II.	1366	1377 June 21	22 3 8	33	Dep. & murd.	Westminster
Henry IV.	1367	1399 Sept. 29	13 5 20	46		Canterbury
Henry V.	1389	1413 Mar. 20	9 5 11	33		Westminster
Henry VI.	1421	1422 Aug. 31	38 6 4	49	Dep. & murd.	Windfor
Edward IV.	1442	1461 Mar. 4	22 1 5	41		Windfor
Edward V.	1471	1483 April 9	0 2 15	12	Murder'd.	Not known
Richard III.	1443	1483 June 22	2 2 0	42	Slain in Battle.	Leicester
Henry VII.	1456	1485 Aug. 22	23 8 0	52		Westminster
Henry VIII.	1492	1509 April 22	37 9 6	55		Windfor
Edward VI.	1537	1547 Jan. 28	6 5 8	15		Westminster
Mary I.	1516	1553 July 6	5 4 11	42	Died of Grief.	Westminster
Elizabeth	1533	1558 Nov. 17	44 4 7	69		Westminster
James I.	1566	1603 Mar. 24	22 0 3	58		Westminster
Charles I.	1600	1625 Mar. 27	23 10 3	48	Beheaded.	Windfor
Charles II.	1630	1649 Jan. 30	36 0 7	54		Westminster
James II.	1633	1685 Feb. 6	4 0 7	67	Abdicated.	St. Germain
Mary II.	1662	1689 Feb. 13	5 10 15	32		Westminster
William III.	1650	1689 Feb. 13	13 0 23	52	Kill'd by a Fall from his Horse.	Westminster
Anne	1665	1702 Mar. 8	12 4 24	49		Westminster
George I.	1660	1714 Aug. 1	12 10 10	67		Hanover
George II.	1683	1727 June 11	33 4 14	77		Westminster
George III.	1738	1760 Oct. 25	Crowned Sept. 22, 1761.			

Above you view the Rise and Fall of Kings,
Whose Fate sometimes a useful Lesson brings.
Well if all Men could profit from the past!
Each know his Duty, each excel the last,
And justly execute his stated Task.

A TABLE of the most Reverend, Right Reverend, and Reverend, the ARCHBISHOPS, BISHOPS and DEANS exercising Ecclesiastical Jurisdiction, 1784.

BISHOPS.	Sees.	Date.	Succeeded.	DEANS.
Dr. John Moore	<i>Bangor</i>	1775	Ewer deceased	
Arch-Bishop	<i>Canterb. A. B.</i>	1783	Cornwallis dec.	Dr. Horne
Dr. Will. Markham	<i>Chester</i>	1748	Keene translat.	
Arch-Bishop	<i>York A. B.</i>	1777	Drummond de.	Dr. J. Fountayne
	<i>St. David's</i>	1761	Squire deceas.	
Dr. Robert Lowth	<i>Oxford</i>	1757	Hume transl.	
	<i>London</i>	1777	Terrick dec.	Bishop Thurlow
	<i>Bangor</i>	1754	Willes transl.	
Dr. John Egerton	<i>Durham</i>	1752	Trevor deceas.	Hon. W. Digby
	<i>Litch & Cov.</i>	1768	Cornwallis tr.	
Hon. Dr. B. North	<i>Worcester</i>	1775	Johnson deceas.	
	<i>Winchester</i>	1781	Thomas deceas.	Dr. Ogle
Lord J. Beaucherk	<i>Hereford</i>	1746	Egerton deceas.	Dr. Wetherell
Sir W. Ashburnham	<i>Chichester</i>	1754	Mawson transl.	Dr. Harward
	<i>St. David's</i>	1766	Clagget transl.	
Dr. Charles Mofs	<i>Bath & Wells</i>	1774	Willes deceased	Ld. Fr. Seymour
Dr. J. Shipley	<i>St. Asaph</i>	1769	Newcome dec.	Dr. W. D. Shipley
Dr. Edmund Law	<i>Carlisle</i>	1769	Lytelton dec.	Dr. Ekins
	<i>Landaff</i>	1769	Shipley transl.	
Dr. S. Barrington	<i>Salisbury</i>	1782	Hume dec.	Dr. Noel
Dr. John Hinchliffe	<i>Peterborough</i>	1769	Lamb dec.	Dr. Ch. Tarrant
	<i>St. David's</i>	1774	Mofs transl.	
H. Dr. James Yorke	<i>Gloucester</i>	1779	Warburton dec.	
	<i>Ely</i>	1781	Keene deceased	Dr. Cooke
Dr. John Thomas	<i>Rochester</i>	1774	Pearce dec.	Dr. Dampier
	<i>Litch. & Cov.</i>	1775	B. North tr.	
Dr. Hurd	<i>Worcester</i>	1781	B. North tr.	Dr. St. John
Dr. Beilby Porteus	<i>Chester</i>	1777	Markham tran.	Dr. Will. Smith
Dr. John Butler	<i>Oxford</i>	1777	Lowth transl.	Dr. Jackson
Dr. John Ross	<i>Exeter</i>	1778	Keppel dec.	Dr. Jer. Milles
Dr. Thurlow	<i>Lincoln</i>	1779	Green dec.	Dr. Cust
	<i>St. David's</i>	1779	Yorke transl.	
Dr. John Warren	<i>Bangor</i>	1783	Moore transl.	Dr. Tho. Lloyd
Dr. J. Cornwallis	<i>Litch. & Cov.</i>	1781	Hurd transl.	Dr. Proby
Dr. Samuel Hallifax	<i>Gloucester</i>	1781	Yorke transl.	Dr. Josiah Tucker
	<i>Bristol</i>	1782	Hume transl.	
Dr. Bagot	<i>Norwich</i>	1783	Yonge dec.	Dr. P. Lloyd
Dr. Watson	<i>Landaff</i>	1782	Barrington tr.	Dr. Adams, A. D.
Dr. Smalwell	<i>St. David's</i>	1783	Warren transl.	Mr. Wollaston, P.
Dr. Wilfon	<i>Bristol</i>	1783	Bagot transl.	Dr. Hallam
	<i>Westminster</i>	1768		Bishop Thomas
Dr. George Mafon	<i>Sodor & Man</i>	1779	Richmond dec	
	<i>Windfor</i>	1778	Hon. &	Rev. Dr. Harlev

A General INTEREST TABLE,

by which the Interest of any Sum, at any Rate, and for any Time, may be readily found.

Days	3 per Cent.				$3\frac{1}{2}$ per Cent.				4 per Cent.				$4\frac{1}{2}$ per Cent.				5 per Cent.			
	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.	l.	s.	d.	q.
1			1	3			2	1			2	2			3	0			3	0
2			3	3			4	2			5	1			6	0			6	2
3			5	3			6	3			7	3			8	3			9	3
4			7	3			9	0			10	2			11	3	1	1	9	
5			9	3			11	2	1	1	1		1	2	3		1	4	1	
6			11	3	1	1	3		1	3	3		1	5	3		1	7	2	
7	1	1	3		1	4	0		1	6	1		1	8	3		1	11	0	
8	1	3	3		1	6	1		1	9	0		1	11	3		2	2	1	
9	1	5	3		1	8	2		1	11	2		2	2	2		2	5	2	
10	1	7	2		1	11	0		2	2	1		2	5	2		2	8	3	
20	3	3	1		3	10	0		4	4	2		4	11	1		5	5	3	
30	4	11	0		5	9	0		6	6	3		7	4	3		8	2	2	
40	6	6	3		7	8	0		8	9	0		9	10	1		10	11	2	
50	8	2	2		9	7	0		10	11	2		12	3	3		13	8	1	
60	9	10	1		11	6	0		13	1	3		14	9	2		16	5	1	
70	11	6	0		13	5	0		15	4	0		17	3	1		19	2	0	
80	13	1	3		15	4	0		17	6	1		19	8	3	1	1	11	0	
90	14	9	2		17	3	0		19	8	2	1	2	2	1	1	4	7	3	
100	16	5	1		19	2	0	1	1	11	0	1	4	8	0	1	7	4	3	
200	1	12	10	2	1	18	4	1	2	3	10	0	2	9	3	3	2	14	9	2
300	2	9	3	3	2	17	6	1	3	5	9	0	3	13	11	1	4	2	2	1

N. B. This Table contains the interest of 100l. for all the several days in the 1st column, and at the several rates of 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, and 5 per cent. in the other 5 columns.

To find the interest of 100l. for any other time, as 1 year and 278 days, at $4\frac{1}{2}$ per cent. Take the sums for the several days here annexed.

The interest for 1 year	4	10	0	0
Against 200 days is	-	2	9	3
70 days	-	0	17	3
8 days	-	0	1	11
Interest required	-	7	18	6

For any other Sum than 100l. First find for 100l. as above, and take it so many times or parts as the sum is of 100l. Thus, to find for 355l. at $4\frac{1}{2}$, for 1 year and 278 days,

First, 3 times the above sum, (for 300l.) is	-	23	15	8
$\frac{1}{2}$ (for 50l.) is	-	3	19	3
$\frac{1}{10}$ of this (for 5l.) is	-	0	7	11
So for 355 it is	-	28	2	10

When the interest is required for any other rate than those in the table, it may easily be made out from them. So $\frac{1}{2}$ of 5 is $2\frac{1}{2}$, $\frac{1}{2}$ of 4 is 2, $\frac{1}{2}$ of 3 is $1\frac{1}{2}$, $\frac{1}{3}$ of 3 is 1, 1-6th of 3 is $\frac{1}{2}$, and 1-12th of 3 is $\frac{1}{4}$. And so, by parts, or by adding or subtracting, any rate may be made out.

The LUNATIONS.

Full Moon the 7th day, at 52 minutes past 1 afternoon,

Last quarter the 15th day, at 34 minutes past 4 afternoon,

New Moon the 22d day, at 48 minutes past 9 morning,

First quarter the 29th day, at 49 minutes past 5 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ south	Clock bef. ☉	
1	Circumcision	8 5	3 55	23 s 2	16 n 16	2 m 3	7 a 24	4 1	
2		8 4	3 56	22 56	20 54	3 20	8 11	4 29	
3		8 4	3 56	22 51	24 32	4 38	9 c	4 57	
4	2 S. aft. Christ	8 3	3 57	22 45	27 1	5 51	9 51	5 25	
5	Old Christ day	8 2	3 58	22 38	28 13	6 57	10 42	5 51	
6	Epiphany	8 1	3 59	22 31	28 4	7 51	11 33	6 17	
7		8 c	4 0	22 24	26 37	☽ rises morn		6 44	
8	Lucian	8 c	4 0	22 16	23 59	4 a 46	0 23	7 9	
9		7 59	4 1	22 7	20 26	6 c	1 c	7 34	
10		7 58	4 2	21 59	15 53	7 11	1 54	7 59	
11	1 S. aft. Epiph.	7 57	4 3	21 49	10 48	8 22	2 36	8 23	
12	Plow Monday	O.N. Year's d.	4 4	21 40	5 17	9 28	3 16	8 46	
13	Cam. Term beg.	Hilary	4 6	21 30	0 s 29	10 46	3 56	9 9	
14	Oxf. Term beg.	7 53	4 7	21 19	6 21	morn	4 37	9 31	
15		7 52	4 8	21 13	12 7	0 c	5 10	9 52	
16		7 51	4 9	20 57	17 32	1 18	6 6	10 13	
17	O. Twelfth day	7 50	4 10	20 46	22 17	2 39	6 56	10 33	
18	2 S. aft. Epiph.	Prisca	4 12	20 33	25 56	4 8	7 51	10 53	
19	Q. Char. b. d. k.	7 47	4 13	20 21	28 2	5 33	8 52	11 11	
20	Fabian	7 46	4 14	20 8	28 11	6 44	9 50	11 29	
21	Agnes	7 44	4 16	19 55	26 15	7 38	11 5	11 47	
22	Vincent	7 43	4 17	19 41	22 23	☽ sets	0 a 9	12 3	
23	Hil. Term beg.	7 41	4 19	19 27	17 c	5 a 54	1 8	12 19	
24		7 40	4 20	19 13	10 40	7 26	2 2	12 34	
25	3 S. aft. Epiph.	Conv. St. Paul	18 58	3 54	8 52	2 51	12 43		
26		7 37	4 23	18 43	2 n 51	10 12	3 38	13 1	
27	Fr. Aug. Fred. b.	7 35	4 25	18 28	9 15	11 35	4 24	13 14	
28		7 34	4 26	18 12	15 2	morn	5 11	13 25	
29		7 32	4 28	17 56	19 59	0 58	5 58	13 36	
30	K. Char. I. man.	7 31	4 29	17 40	23 55	2 17	6 47	13 46	
31		7 29	4 31	17 23	26 41	3 32	7 38	13 55	
Days	Day increas.	Length of Day.	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h sets.
1	0 8	7 50	14 56	11 54	11 5	10 25	23 50	28 13	7 a 11
7	0 16	8 0	15 7	12 26	4 16	16 57	3 35	18 25	rises.
13	0 28	8 12	15 13	12 57	7 25	23 3	12 15	12 15	7 m 30
19	0 44	8 28	15 29	13 29	10 32	29 10	23 c	10 42	7 7
25	1 0	8 44	15 40	14 0	13 37	5 16	2 48	14 27	6 43

1784.

January.

9

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	4's latitude	8's latitude	9's latitude	8's latitude
1	5 59	6 1	2 10	12 X 41	0 n 16	0 s 37	0 n 34	3 n 23	2 s 4
7	5 56	6 4	2 9	12 22	0 16	0 37	0 46	3 20	2 6
13	5 52	6 8	2 7	12 3	0 15	0 37	0 52	3 12	1 51
19	5 46	6 14	2 5	11 44	0 15	0 38	0 57	2 59	1 12
25	5 39	6 21	2 3	11 25	0 15	0 38	1 1	2 43	0 3
Days	☉'s longitude	☽'s long.	☽'s lat. tude	h's long.	4's long.	8's long.	9's long.	8's long.	
1	10 49 42	3 8 0	3 n 59	14 35	6 59	21 10	23 59	16 4	
2	11 50 53	15 35	4 34	14 42	7 13	21 40	25 0	17 42	
3	12 52 3	27 57	4 56	14 49	7 26	22 11	26 2	19 21	
D	13 53 13	10 11 9	5 4	4 56	7 40	22 41	27 4	21 0	
5	14 54 23	22 13	4 59	15 3	7 54	23 12	28 7	22 39	
6	15 55 32	4 12	4 40	15 10	8 8	23 42	29 9	24 18	
7	16 56 40	16 6	4 9	15 17	8 22	24 13	0 12	25 58	
8	17 57 49	27 57	3 27	15 24	8 35	24 44	1 16	27 38	
9	18 58 57	9 47	2 37	15 32	8 49	25 15	2 20	29 18	
10	20 0 5	21 37	1 39	15 39	9 3	25 46	3 24	0 59	
D	21 1 13	3 12 30	0 37	15 46	9 17	26 17	4 28	2 39	
12	22 2 20	15 30	0 s 28	15 53	9 31	26 49	5 33	4 19	
13	23 3 28	27 40	1 33	16 0	9 45	27 20	6 37	5 58	
14	24 4 35	10 5	2 34	16 7	9 59	27 52	7 42	7 36	
15	25 5 42	22 49	3 30	16 14	10 13	28 24	8 48	9 14	
16	26 6 48	5 56	4 16	16 21	10 27	28 56	9 53	10 52	
17	27 7 55	19 31	4 50	16 28	10 41	29 28	10 59	12 28	
D	28 9 1	3 35	5 8	16 35	10 55	0 0	12 5	14 3	
19	29 10 6	18 6	5 7	16 42	11 10	0 32	13 11	15 35	
20	0 11 11	3 2	4 46	16 49	11 24	1 5	14 18	17 5	
21	1 12 15	18 13	4 4	16 56	11 38	1 38	15 25	18 32	
22	2 13 19	3 32	3 5	17 2	11 53	2 11	16 32	19 56	
23	3 14 22	18 45	1 52	17 9	12 7	2 44	17 39	21 16	
24	4 15 24	2 44	0 33	17 16	12 21	3 17	18 46	22 31	
D	5 16 24	18 21	0 n 47	17 23	12 35	3 50	19 54	23 39	
26	6 17 23	2 31	2 1	17 29	12 50	4 24	21 2	24 43	
27	7 18 21	16 13	3 6	17 36	13 4	4 57	22 10	25 41	
28	8 19 18	29 30	3 59	17 43	13 19	5 31	23 18	26 26	
29	9 20 14	12 22	4 38	17 49	13 33	6 5	24 26	27 1	
30	10 21 8	24 56	5 3	17 56	13 47	6 38	25 34	27 31	
31	11 22 0	7 13	5 13	18 3	14 2	7 12	26 42	27 54	
Days	☽'s sets	☽'s sets	☽'s rises	☽'s sets	h's declin.	4's declin.	8's declin.	9's declin.	8's declin.
1	6 a 11	1 m 20	3 m 58	4 a 9	22 s 24	19 s 8	8 n 52	15 s 30	24 s 33
7	5 53	1 12	4 5	4 36	22 15	18 47	10 6	16 57	23 3
13	5 35	1 4	4 14	5 8	22 15	18 26	11 20	18 17	20 36
19	5 17	0 57	4 25	5 40	22 10	18 3	12 33	19 27	17 20
25	4 59	0 51	4 32	6 1	22 6	17 39	13 46	20 22	13 42

The LUNATIONS.

Full Moon the 6th day, at 19 minutes past 9 morning,
 Last quarter the 14th day, at 19 minutes past 5 morning,
 New Moon the 20th day, at 25 minutes past 8 at night,
 First quarter the 27th day, at 44 minutes past 10 at night.

M	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾rises & sets	☾ south	Clock bef. ☉	
D	S aft. Epiph.	7 27	4 33	17 s 7	28 n 11	4 m 41	8 a 30	14 3	
2	Purif. Candl. day	7 26	4 34	16 49	28 20	5 39	9 21	14 10	
3	Blaise	7 24	4 36	16 32	27 10	6 22	10 12	14 17	
4		7 22	4 38	16 14	24 47	6 53	11 0	14 23	
5	Agatha	7 20	4 40	15 56	21 20	7 16	11 45	14 27	
6		7 19	4 41	15 38	17 1	☾rises	morn	14 31	
7		7 17	4 43	15 19	12 2	6 a 7	0 28	14 35	
8	Septuagesima	7 15	4 45	15 0	6 34	7 18	1 10	14 37	
9		7 13	4 47	14 41	0 48	8 29	1 50	14 39	
10		7 11	4 49	14 21	5 4	9 44	2 32	14 40	
11		7 9	4 51	14 2	10 51	11 0	3 13	14 40	
12	Hil. Term ends	7 8	4 52	13 42	16 17	morn	3 58	14 39	
13		7 6	4 54	13 22	11 8	0 20	4 45	14 38	
14	Valentine	7 4	4 56	13 2	25 2	1 45	5 37	14 36	
D	Sexages. Sunday	7 2	4 58	12 41	27 36	3 20	6 34	14 33	
16		7 0	5 0	12 20	28 28	4 23	7 36	14 29	
17		6 58	5 2	11 59	27 24	5 23	8 40	14 25	
18		6 56	5 4	11 38	24 23	6 5	9 44	14 20	
19		6 55	5 5	11 17	19 41	6 35	10 45	14 15	
20		6 53	5 7	10 56	13 44	☾sets	11 43	14 8	
21		6 51	5 9	10 34	7 1	6 a 16	0 a 36	14 1	
D	Quinqu. Sunday	6 49	5 11	10 12	0 4	7 42	1 25	13 54	
23		6 47	5 13	9 50	6 n 43	9 10	2 13	13 45	
24	St. Matthias	Pr Adol. Fred. b. Shrove			12 59	10 29	3 1	13 37	
25	Ash Wednesday	6 45	5 17	9 6	18 26	11 57	3 50	13 27	
26		6 41	5 19	8 44	22 50	morn	4 40	13 17	
27		6 36	5 21	8 21	26 3	1 18	5 32	13 6	
28		6 37	5 23	7 58	27 57	2 31	6 25	12 35	
C	Quad. 1 S. in Lent	6 35	5 25	7 36	28 29	3 34	7 18	12 43	
Days	Day increas.	Length of day	Helioe. long. h	Helioe. long. ll	Helioe. long. ♂	Helioe. long. ⊖	Helioe. long. ♀	Helioe. long. ♀	h rises
1	1 24	9 8	15 52	14 38	17 10	12 23	14 7	28 11	9 6 m 17
7	1 45	9 26	16 3	15 10	20 11	18 27	23 47	4 12	5 56
13	2 7	9 45	16 14	15 41	23 11	24 31	3 12	5 12	9 5 35
19	2 29	10 10	16 25	16 13	26 8	omr 34	13 2	0 43	5 13
25	2 51	10 34	16 36	16 45	29 5	6 36	22 37	12 10	4 52

1784.

February.

11

Days	Day lig. begin	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	☿'s latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	5 30	6 30	2 0	11X 2	0 n 14	0 s 39	1 n 6	2 n 21	1 n 50
7	5 21	6 39	1 59	10 43	0 14	0 39	1 9	2 0	3 19
13	5 12	6 48	1 57	10 24	0 14	0 40	1 12	1 38	3 41
19	5 0	7 0	1 57	10 5	0 13	0 40	1 14	1 15	2 52
25	4 50	7 10	1 56	9 46	0 13	0 41	1 16	0 52	1 35
Days	☉'s longitude	☿'s long.	♂'s latitude	h's long.	☿'s long.	♂'s long.	♀'s long.	♂'s long.	
D	12 22 50	19 11 18	5 n 9	18 10	14 16	7 46	27 45	28 4	
2	13 23 40	1 16	4 52	18 17	14 31	8 20	29 0	28 R 5	
3	14 24 28	13 8	4 22	18 23	14 45	8 54	0 9	27 54	
4	15 25 14	24 58	3 41	18 30	14 59	9 28	1 18	27 26	
5	16 25 50	6 48	2 50	18 37	15 14	10 2	2 27	26 47	
6	17 26 42	18 40	1 52	18 44	15 28	10 36	3 37	26 3	
7	18 27 24	0 35	0 48	18 50	15 42	11 10	4 46	25 15	
D	19 28 6	12 37	0 s 18	18 57	15 57	11 45	5 56	24 22	
9	20 28 46	14 46	1 24	19 3	16 11	12 19	7 5	23 18	
10	21 29 24	7 5	2 27	19 9	16 25	12 54	8 15	22 4	
11	22 30 2	19 37	3 25	19 16	16 39	13 28	9 24	20 52	
12	23 30 38	2 26	4 13	19 22	16 54	14 3	10 34	19 43	
13	24 31 13	15 33	4 50	19 28	17 8	14 38	11 44	18 38	
14	25 31 47	29 2	5 12	19 35	17 22	15 13	12 54	17 37	
D	26 32 20	12 54	5 16	19 41	17 37	15 48	14 4	16 38	
16	27 32 51	27 8	5 2	19 47	17 51	16 23	15 15	15 42	
17	28 33 21	11 43	4 28	19 53	18 5	16 58	16 25	14 53	
18	29 33 49	26 35	3 36	19 59	18 19	17 33	17 35	14 14	
19	X 0 34 16	11 37	2 28	20 5	18 33	18 8	18 46	13 44	
20	1 34 42	26 41	1 10	20 11	18 47	18 44	19 57	13 20	
21	2 35 6	11X 37	0 n 12	20 17	19 2	19 19	21 7	13 2	
D	3 35 28	26 17	1 33	20 23	19 16	19 55	22 18	12 52	
23	4 35 48	10Y 35	2 45	20 28	19 30	20 31	23 29	12 49	
24	5 36 7	24 27	3 45	20 34	19 44	21 6	24 40	12 D 53	
25	6 36 23	7 53	4 31	20 40	19 58	21 42	25 51	13 3	
26	7 36 37	20 53	5 2	20 45	20 12	22 18	27 2	13 18	
27	8 36 49	3 13	5 16	20 51	20 26	22 53	28 13	13 39	
28	9 36 59	15 50	5 16	20 56	20 40	23 29	29 24	14 7	
C	10 37 7	27 55	5 1	21 2	20 54	24 5	0 36	14 39	
Days	☿'s sets	♂'s sets	♀'s rises	♂'s sets	h's declin.	☿'s declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	4 a 39	0 m 43	4 m 41	6 a 5	22 s c	17 s 11	15 n 9	21 s 6	10 s 26
7	rises	0 41	4 49	5 25	31 55	16 46	16 18	21 23	10 0
13	6 m 53	0 36	4 51	rises	21 50	6 21	17 24	21 19	11 45
19	6 33	0 33	5 0	5 m 55	21 4	15 55	18 27	20 55	13 58
25	6 15	0 32	5 2	5 4	21 4	5 29	19 26	20 5	15 24

The LUNATIONS.

Full Moon the 7th day, at 35 minutes past 3 morning,
 Last quarter the 14th day, at 40 minutes past 2 afternoon,
 New Moon the 21st day, at 13 minutes past 7 morning,
 First quarter the 28th day, at 23 minutes past 5 evening.

M	Sundays & other	☉	☉	☉'s	☉'s	☉rises	☉	Clock
D	remark. days	rises	sets	declin.	declin.	& sets	South.	bef. ☉
1	David	6 33	5 27	7 5 13	27 n 40	4 m 24	8 a 8	12 31
2	Chad	6 31	5 29	6 50	25 36	4 56	8 57	12 18
3	Ember Week	6 29	5 31	6 27	22 26	5 25	9 44	12 5
4		6 27	5 33	6 4	18 20	5 43	10 29	11 51
5		6 25	5 35	5 41	13 29	5 57	11 11	11 37
6		6 23	5 37	5 17	8 5	6 9	11 52	11 22
7	2 Sun. in Lent.	Perpet.	5 39	4 54	2 19	☉ rises	morn	11 7
8		6 19	5 41	4 31	3 s 36	7 a 37	0 33	10 51
9		6 17	5 43	4 7	9 26	8 53	1 15	10 36
10		6 15	5 45	3 44	15 4	10 14	1 59	10 20
11		6 13	5 47	3 20	20 5	11 34	2 47	10 3
12	Gregory	6 11	5 49	2 56	24 12	morn	3 38	9 47
13		6 9	5 51	2 33	27 5	0 59	4 33	9 30
14	3 Sun. in Lent	6 7	5 53	2 9	28 24	2 17	5 33	9 12
15		6 5	5 55	1 45	27 50	3 21	6 34	8 55
16		6 3	5 57	1 22	25 37	4 7	7 37	8 37
17	St. Patrick	6 1	5 59	0 58	21 37	4 41	8 36	8 20
18	Edw. K. W. S.	5 59	6 1	0 34	16 17	5 3	9 33	8 2
19	Equal d. and n.	5 57	6 3	0 11	9 59	5 20	10 26	7 44
20		5 55	6 5	0 13	3 11	5 40	11 17	7 26
21	4 or Midlent S.	Benedict	6 7	0 37	3 n 43	☉ sets	0 a 6	7 7
22		5 51	6 9	1 0	10 17	8 a 10	0 56	6 49
23		5 49	6 11	1 24	16 12	9 36	1 46	6 31
24		5 47	6 13	1 48	21 9	11 1	2 36	6 12
25	Annunc. Lady.	5 46	6 14	2 11	24 56	morn	3 28	5 53
26		5 44	6 16	2 35	27 22	0 20	4 22	5 35
27		5 42	6 18	2 58	28 23	1 28	5 15	5 16
28	5 Sun. in Lent	5 40	6 20	3 22	28 0	2 25	6 8	4 58
29		5 38	6 22	3 45	26 18	3 6	6 59	4 39
30		5 36	6 24	4 8	23 28	3 34	7 47	4 20
31		5 34	6 26	4 31	19 30	3 57	8 33	4 2
☉	Day	Length	Helioc.	Helioc.	Helioc.	Helioc.	Helioc.	☉
☉	increas.	of day	long. ♀	long. ♂	long. ♂	long. ☉	long. ♀	☉ rises
1	3 11	10 55	16 45	17 11	10 30	11 37	0 35	7 58
7	3 35	11 19	16 36	17 42	4 22	17 37	10 7	25 23
13	3 59	11 43	17 7	18 15	7 15	23 36	19 38	11 59
19	4 23	12 7	17 17	18 47	10 6	29 33	29 8	28 33
25	4 47	12 31	17 28	19 16	12 55	5 30	8 38	15 49

1784.

March.

13

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. ☾'s node	☿'s latitude	♊'s latitude	♈'s latitude	♀'s latitude	♏'s latitude
1	4 43	7 17	1 55	9X30	on 13	os 41	1 n 18	on 32	on 31
7	4 30	7 30	1 16	9 11	o 12	o 42	1 19	o 10	os 35
13	4 17	7 43	1 57	8 52	o 12	o 43	1 20	os 11	1 26
19	4 4	7 56	1 58	8 33	o 11	o 43	1 21	o 30	2 1
25	3 50	8 10	2 c	8 14	o 11	o 45	1 22	o 47	2 20
Days	☉'s longitude	☾'s long.	☾'s latitude	☿'s long.	♊'s long.	♈'s long.	♀'s long.	♏'s long.	
1	X 11. 37 13	9 25 51	4 n 34	21 17 7	21 22 8	24 8 40	1 47	15 15	
2	12 37 16	21 41	3 55	21 12 21	22 25 16	2 58	15 54		
3	13 37 17	3 29	3 7	21 17 21	36 25 52	4 10	16 38		
4	14 37 16	15 20	2 10	21 23 21	50 26 27	5 21	17 26		
5	15 37 13	27 16	1 7	21 28 22	3 27 3	6 33	18 18		
6	16 37 8	9 20	0 0	21 33 22	17 27 39	7 44	19 12		
C	17 37 0	21 34	1 9	21 33 22	30 28 15	8 56	20 8		
8	18 36 51	3 58	2 12	21 43 22	44 28 51	10 8	21 7		
9	19 36 40	16 35	3 12	21 48 22	58 29 27	11 19	22 10		
10	20 36 27	29 24	4 3	21 52 23	11 0 11	12 31	23 16		
11	21 36 13	12 28	4 43	21 57 23	25 0 39	13 42	24 24		
12	22 35 57	25 46	5 8	22 2 23	39 1 15	14 54	25 33		
13	23 35 39	9 20	5 17	22 6 23	52 1 51	16 6	26 44		
C	24 35 20	23 8	5 7	22 11 24	5 2 27	17 18	27 58		
15	25 34 59	7 12	4 40	22 15 24	19 3 3	18 30	29 14		
16	26 34 36	21 28	3 55	22 19 24	32 3 40	19 42	30 31		
17	27 34 11	5 56	2 54	22 24 24	45 4 16	20 54	1 50		
18	28 33 45	20 32	1 42	22 28 24	58 4 52	22 6	3 11		
19	29 33 17	5 11	0 23	22 32 25	11 5 28	23 18	4 33		
20	Q 32 47	19 46	on 57	22 36 25	24 6 5	24 30	5 57		
C	1 32 15	4 12	2 13	22 40 25	37 6 41	25 42	7 23		
22	2 31 41	18 23	3 19	22 43 25	50 7 18	26 54	8 50		
23	3 31 5	2 14	4 11	22 47 26	2 7 54	28 6	10 19		
24	4 30 27	15 42	4 48	22 51 26	19 8 30	29 18	11 49		
25	5 29 47	28 47	5 0	22 55 26	28 9 7	30 13	20		
26	6 29 4	11 29	5 14	22 59 26	40 9 43	1 43	14 53		
27	7 28 18	23 52	5 4	23 2 26	53 10 19	2 55	16 27		
C	8 27 30	5 59	4 40	23 5 27	6 10 56	4 8	18 3		
29	9 26 40	17 56	4 5	23 9 27	10 11 32	5 20	19 41		
30	10 25 47	29 46	3 19	23 12 27	31 12 8	6 33	21 19		
31	11 24 52	11 35	2 25	23 15 27	44 12 45	7 45	22 59		
Days	♊'s rises	♈'s sets	♀'s rises	♏'s rises	☿'s declin.	♊'s declin.	♈'s declin.	♀'s declin.	♏'s declin.
1	5 m 58	o m 30	5 m 5	5 m 37	21 s 36	15 s 7	20 p 13	19 s 15	15 s 48
7	5 38	o 27	5 3	5 34	21 31	14 41	21 5	17 55	15 20
13	5 18	o 25	4 59	5 32	21 27	14 15	21 52	16 12	13 57
19	5 0	o 24	4 52	5 29	21 23	13 40	22 35	14 11	11 44
25	4 40	o 22	4 49	5 24	21 20	13 24	23 12	12 3	8 41

The LUNATIONS.

Full Moon the 5th day, at 7 minutes past 7 at night,
 Last quarter the 12th day, at 32 minutes past 9 at night,
 New Moon the 19th day, at 15 minutes past 6 evening,
 First quarter the 27th day, at 27 minutes past noon.

M	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
1		5 32	6 28	4 n 54	15 n 3	4 m 11	9 a 15	3 43	
2	Camb. T. ends	5 30	6 30	5 17	9 50	4 24	9 58	3 25	
3	Oxf. Term ends	Richard	6 32	5 40	4 10	4 41	10 39	3 7	
C	Palm Sunday	St Amb.	6 34	6 3	1 s 45	4 52	11 20	2 49	
5		5 24	6 36	6 26	7 43	☾ rises	morn	2 31	
6		5 22	6 38	6 48	13 29	8 a 5	0 4	2 12	
7		5 20	6 40	7 11	18 45	9 30	0 52	1 56	
8		5 18	6 42	7 33	23 11	10 53	1 42	1 39	
9	Good Friday	5 16	6 44	7 55	26 25	morn	2 36	1 22	
10		5 14	6 46	8 17	28 8	0 14	3 35	1 5	
C	Easter day	5 12	6 48	8 39	28 4	1 24	4 37	0 49	
12	Easter Monday	5 10	6 50	9 1	26 13	2 15	5 38	0 33	
13	Easter Tuesday	5 8	6 52	9 23	22 42	2 52	6 38	0 17	
14		5 6	6 54	9 44	17 50	3 15	7 34	0 2	
15		5 5	6 55	10 6	11 59	3 35	8 26	caf. 12	
16		5 3	6 57	10 27	5 31	3 51	9 16	0 27	
17		5 1	6 59	10 48	1 n 11	4 7	10 4	0 41	
C	1 S. aft. Easter	4 59	7 1	11 9	7 46	4 20	10 52	0 55	
19	Alphege	4 57	7 3	11 30	13 52	☾ sets	11 41	1 8	
20		4 55	7 5	11 50	19 13	8 a 39	0 a 31	1 21	
21	Ox. & Ca. T. beg.	4 53	7 7	12 10	23 29	10 1	1 23	1 33	
22		4 51	7 9	12 30	26 27	11 16	2 17	1 45	
23	St. George	4 50	7 10	12 50	28 1	morn	3 11	1 57	
24		4 48	7 12	13 10	28 7	0 17	4 6	2 8	
C	2 Sun. aft. Easter	St. Ma k.	Prs. Mary b.	26 51	1 6	4 58	2 19		
26		4 44	7 16	13 49	24 22	1 41	5 46	2 29	
27		4 42	7 18	14 8	20 51	2 4	6 32	2 38	
28	Easter T. begins	4 41	7 19	14 27	16 31	2 23	7 16	2 48	
29		4 39	7 21	14 45	11 32	2 37	7 57	2 56	
30		4 37	7 23	15 3	6 4	2 50	8 39	3 4	
Days	Day increaf.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♀	☾ rises
1	5 15	12 59	17 41	19 55	16 11	12 24	19 42	8 1	2 m 51
7	5 39	13 23	17 52	20 27	18 57	18 17	29 10	29 58	2 29
13	6 1	13 45	18 3	20 59	21 43	24 10	3 39	25 57	2 7
19	6 23	14 7	18 13	21 31	24 27	om 1	18 8	27 4	1 46
25	6 45	14 29	18 24	22 3	27 11	5 52	27 38	3 11	3 1 23

1784.

April.

15

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. ('s node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	3 33	8 27	2 3	7X52	0 n 11	0 s 46	1 n 23	1 s 5	2 s 21
7	3 17	8 43	2 8	7 33	0 10	0 47	1 23	1 17	2 3
13	3 2	8 58	2 11	7 14	0 10	0 48	1 23	1 27	1 26
19	2 47	9 13	2 15	6 55	0 10	0 50	1 23	1 34	0 33
25	2 26	9 34	2 25	6 35	0 0	0 51	1 23	1 38	0 n 30
Days	☉'s longitude	☌'s long.	☌'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	Y 12 23 55	23 27	1 n 25	23 18	27 56	13 11	21	8X58	24X41
2	13 22 55	5 28	0 20	23 21	28 8	13 58	10 10	26 24	
3	14 21 53	17 40	0 s 47	23 24	28 20	14 35	11 22	28 8	
C	15 20 49	0 6	1 52	23 26	28 32	15 11	12 35	29 54	
5	16 19 43	12 48	2 53	23 29	28 44	16 48	13 47	1 41	
6	17 18 35	25 45	3 47	23 32	28 55	16 25	14 59	3 30	
7	18 17 25	8 59	4 29	23 34	29 7	17 2	16 12	5 21	
8	19 16 13	22 26	4 57	23 36	29 19	17 39	17 25	7 13	
9	20 14 59	6 6	5 9	23 39	29 30	18 16	18 37	9 6	
10	21 13 44	19 56	5 4	23 41	29 42	18 52	19 50	11 1	
C	22 12 27	3 54	4 40	23 43	29 53	19 29	21 2	12 57	
12	23 11 8	17 58	3 59	23 45	0X 5	20 5	22 15	14 55	
13	24 9 48	2 6	3 4	23 47	0 16	20 42	23 27	16 54	
14	25 8 26	16 17	1 57	23 49	0 27	21 19	24 40	18 56	
15	26 7 3	0X30	0 43	23 50	0 38	21 56	25 52	20 58	
16	27 5 38	14 42	0 n 34	23 52	0 49	22 32	27 5	23 1	
17	28 4 11	28 50	1 48	23 54	1 0	23 9	28 17	25 6	
C	29 2 43	12 52	2 54	23 55	1 10	23 45	29 30	27 12	
19	0 1 13	26 43	3 50	23 56	1 21	24 22	0 43	29 18	
20	0 59 41	10 19	4 21	23 58	1 31	24 59	1 55	1 25	
21	1 58 7	23 38	4 56	23 59	1 42	25 36	3 8	3 33	
22	2 56 31	6 38	5 6	24 0	1 52	26 12	4 21	5 42	
23	3 54 53	19 18	5 c	24 1	2 3	26 49	5 33	7 51	
24	4 53 13	1 41	4 39	24 2	2 13	27 26	6 46	10 0	
C	5 51 31	13 49	4 7	24 2	2 23	28 3	7 59	12 8	
26	6 49 47	25 45	3 24	24 3	2 33	28 40	9 11	14 15	
27	7 48 1	7 36	2 33	24 3	2 42	29 17	10 24	16 22	
28	8 46 13	19 25	1 3	24 4	2 52	29 53	11 37	18 27	
29	9 44 22	1 19	0 33	24 4	3 2	0 30	12 50	20 31	
30	10 42 29	13 22	0 s 32	24 5	3 11	1 7	14 3	22 33	
Days	u's rises	δ's sets	♀ rises	♂ rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	4 m 19	0 m 19	4 m 42	5 m 9	21 s 16	12 s 54	23 n 48	9 s 13	4 s 17
7	3 59	0 17	4 33	5 14	21 15	12 31	24 n 13	6 38	0 n 15
13	3 40	0 13	4 27	5 10	21 12	12 8	24 31	3 56	5 19
19	3 19	0 9	4 16	sets	21 11	11 46	24 44	1 9	10 43
25	2 57	0 4	4 8	7 a 55	21 10	11 25	24 50	1 n 40	15 58

The LUNATIONS.

Full Moon the 5th day, at 17 minutes past 7 morning,
 Last quarter the 12th day, at 3 minutes past 3 morning,
 New Moon the 19th day, at 48 minutes past 5 morning,
 First quarter the 27th day, at 32 minutes past 6 morning.

M	Sundays & other D remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉	
1	St. Phil. & Jame	4 35	7 25	15 n 21	0 n 16	3 m 2	9 a 20	3 12	
C 3	Sun. aft. Easter	4 34	7 26	15 39	5 s 40	3 13	10 4	3 19	
3	Inv. of the Cross	4 32	7 28	15 57	11 31	3 22	10 49	3 26	
4		4 30	7 30	16 14	17 1	3 33	11 39	3 32	
5		4 27	7 32	16 31	21 48	☾ rises	morn	3 37	
6	St. John a. p. Lat.	4 27	7 33	16 48	25 29	10 a 3	0 33	3 42	
7		4 25	7 35	17 4	27 41	11 17	1 31	3 46	
8		4 23	7 37	17 20	28 5	morn	2 33	3 50	
C 4	Sun. aft. Easter	4 22	7 38	17 36	26 37	0 5	3 36	3 53	
10		4 20	7 40	17 52	23 25	0 58	4 37	3 56	
11		4 19	7 41	18 7	18 49	1 24	5 34	3 58	
12		4 17	7 43	18 22	13 12	1 43	6 28	3 59	
13		4 16	7 44	18 37	6 58	2 0	7 17	4 0	
14		4 14	7 46	18 51	0 27	2 14	8 5	4 0	
15		4 13	7 47	19 5	6 n 0	2 25	8 51	4 0	
C	Rogat. Sunday	4 11	7 49	19 19	12 7	2 36	9 37	3 59	
17		4 10	7 50	19 32	17 35	2 50	10 26	3 57	
18		4 8	7 52	19 45	22 8	3 9	11 16	3 55	
19	Q. Charl. born	Dunst.	7 53	19 58	25 30	☾ sets	0 a 9	3 52	
20	Ascension	4 6	7 54	20 11	27 31	10 a 7	1 3	3 49	
21		4 4	7 56	20 23	28 5	11 1	1 57	3 45	
22	Prs. Eliz. born	4 3	7 57	20 34	27 14	11 38	2 50	3 40	
C	S. aft. Ascension	4 2	7 58	20 46	25 6	morn	3 40	3 36	
24	Easter T. ends	4 1	7 59	20 57	21 53	0 6	4 27	3 30	
25		3 59	8 1	21 7	17 47	0 26	5 11	3 24	
26	Augustin	3 58	8 2	21 18	13 1	0 42	5 53	3 18	
27	Oxi. Term ends	Venerable	Bede	3 21	28 7	45 0	57 6	34 3	
28		3 56	8 4	21 37	2 8	1 6	7 14	3 4	
29	K. Ch. II. rest.	3 55	8 5	21 46	3 s 40	1 15	7 55	2 56	
C	Whit-Sunday	3 54	8 6	21 55	9 29	1 25	8 38	2 48	
31	Whit-Monday	3 53	8 7	22 3	15 4	1 38	9 26	2 40	
Days	Day increas.	Length of day	Helioc. long. h	Helioc. long. 7'	Helioc. long. 3'	Helioc. long. 0	Helioc. long. 2'	Helioc. long. 3'	h rises
1	7	14 51	18 35	22 35	29 53	11 14	7 8	10 42	1 m 1
7	7	15 11	18 46	23 7	29 35	17 29	16 39	15 15	0 38
13	7	15 29	18 57	23 35	5 16	23 16	26 10	14 19	0 15
19	8	15 47	19 8	24 11	7 57	29 2	5 43	8 22	11 a 49
25	8	16 3	19 19	24 45	0 31	4 48	15 17	28 45	11 24

1784.

May.

17

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. C's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	2 6	9 57	2 37	6X16	on 9	os 52	1 n 23	1 s 30	1 n 30
7	1 44	10 19	2 48	5 57	o 8	o 53	1 22	1 38	2 11
13	1 19	10 45	3 5	5 38	o 8	o 54	1 22	1 34	2 25
19	o 48	11 20	3 32	5 19	o 7	o 56	1 21	1 28	2 6
25	o	All day-light		5 o	o 7	o 58	1 20	1 20	1 15
Days	☉'s longitude	☌'s long.	☽'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	8 11 40 34	25 12 39	1 s 36	24 12 5	3X20	10 44	15 16	24 8 33	
C	12 38 38	8 14	2 37	24 5	3 29	2 21	16 28	26 31	
3	13 36 40	21 10	3 31	24 R 5	3 38	2 58	17 41	28 26	
4	14 34 40	4 m 26	4 15	24 5	3 47	3 34	18 54	o II 17	
5	15 32 39	18 3	4 46	24 5	3 56	4 11	20 7	2 5	
6	16 30 36	1 f 57	5 1	24 4	4 5	4 48	21 20	3 51	
7	17 28 31	16 3	4 58	24 4	4 13	5 25	22 33	5 34	
8	18 26 25	o 18	4 37	24 3	4 21	6 22	23 46	7 14	
C	19 24 18	14 36	3 58	24 3	4 29	6 39	24 58	8 50	
10	20 22 10	28 52	3 4	24 2	4 37	7 16	26 11	10 23	
11	21 20 1	13 5	2 c	24 2	4 45	7 53	27 24	11 51	
12	22 17 50	27 11	o 48	24 1	4 53	8 30	28 37	13 16	
13	23 15 39	11X11	on 26	23 59	5 1	9 7	29 50	14 37	
14	24 13 26	25 4	1 38	23 58	5 8	9 44	18 3	15 54	
15	25 11 12	8 45	2 43	23 57	5 16	10 21	2 16	17 8	
C	26 8 57	22 26	3 39	23 55	5 23	10 58	3 29	18 19	
17	27 6 41	5 52	4 21	23 54	5 30	11 35	4 42	19 26	
18	28 4 25	19 6	4 48	23 53	5 37	12 12	5 55	20 28	
19	29 2 7	2 II 7	5 c	23 51	5 44	12 49	7 8	21 26	
20	29 59 47	14 54	4 56	23 49	5 51	13 26	8 21	22 20	
21	II o 57 26	27 25	4 38	23 47	5 57	14 3	9 34	23 10	
22	1 55 4	9 42	4 8	23 45	6 4	14 40	10 47	23 56	
C	2 52 40	21 47	3 26	23 43	6 10	15 18	12 24	24 37	
24	3 50 15	3 41	2 36	23 41	6 16	15 55	13 13	25 14	
25	4 47 49	15 31	1 41	23 39	6 22	16 32	14 26	25 47	
26	5 45 21	27 15	o 39	23 37	6 28	17 9	15 39	26 13	
27	6 42 52	9 12	os 24	23 35	6 34	17 46	16 52	26 36	
28	7 40 21	21 16	1 27	23 32	6 39	18 23	18 5	26 58	
29	8 37 49	3 34	2 27	23 30	6 44	19 o	19 18	27 16	
C	9 35 15	16 13	3 21	23 28	6 49	19 37	20 31	27 25	
31	10 32 40	29 11	4 7	23 25	6 54	20 14	21 44	27 26	
Days	u's rises	δ's sets	♀'s rises	♂'s sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	2 m 36	11 a 58	3 n 57	8 a 45	21 s 10	11 s 5	24 n 50	4 n 30	20 n 23
7	2 15	11 45	3 45	9 29	21 11	10 47	24 44	7 16	23 25
13	1 54	11 40	3 35	9 57	21 12	10 31	24 31	9 57	24 59
19	1 31	11 31	3 27	10 5	21 14	10 17	24 12	12 31	25 18
25	1 o	11 20	3 17	9 55	21 17	10 5	23 46	14 54	24 40

B

The LUNATIONS.

Full Moon the 3d day, at 34 minutes past 4 afternoon,
 Last quarter the 10th day, at 28 minutes past 8 morning,
 New Moon the 17th day, at 26 minutes past 6 evening,
 First quarter the 25th day, at 33 minutes past 10 at night.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉	
1	Whit-Tuesday	Nicom.	8 8	22 n 11	20 s 7	1 m 52	10 a 17	2 31	
2	Ember Week	3 51	8 9	22 19	24 15	2 14	11 15	2 22	
3		3 50	8 10	22 26	27 2	☾ rises	morn	2 12	
4	K. Geo. III. born	3 49	8 11	22 33	28 3	10 a 3	0 16	2 2	
5	Pr. Ern. Aug. bo.	Bonif.	8 11	22 40	27 7	10 49	1 21	1 52	
C	Trinity Sunday	3 48	8 12	22 46	24 18	11 22	2 25	1 41	
7		3 47	8 13	22 51	19 55	11 46	3 25	1 30	
8		3 47	8 13	22 57	14 24	morn	4 20	1 19	
9	Oxford T. beg.	3 46	8 14	23 2	8 11	0 4	5 12	1 7	
10	Pr. Amelia bor.	Cor. Ch.	8 14	23 6	1 41	0 18	6 0	0 56	
11	St. Barnabas	Trin. T. beg.	15 23	10 4 n	47 0	29 6	46 0	44	
12		3 45	8 15	23 14	10 55	0 41	7 32	0 31	
C	1 Sun. aft. Trin.	3 44	8 16	23 17	16 28	0 55	8 19	0 19	
14		3 44	8 16	23 20	21 9	1 11	9 8	0 6	
15		3 44	8 16	23 22	24 46	1 31	9 59	obef. 6	
16		3 43	8 17	23 24	27 5	2 2	10 51	0 19	
17	St. Alban	3 43	8 17	23 26	28 1	☾ sets	11 45	0 32	
18		3 43	8 17	23 27	27 32	9 a 34	0 a 38	0 45	
19		3 43	8 17	23 28	25 44	10 4	1 29	0 58	
C	2 Sun. aft. Trin.	Tr. Ed. KWS.	17 23	28 22	47 10	26 2	17 1	11	
21	Longest day	3 43	8 17	23 28	18 54	10 44	3 2	1 25	
22		3 43	8 17	23 28	14 19	10 57	3 45	1 37	
23		3 43	8 17	23 27	9 11	11 8	4 25	1 50	
24	St. John Bapt.	3 43	8 17	23 25	3 43	11 19	5 5	2 3	
25		3 43	8 17	23 24	1 s 57	11 28	5 44	2 16	
26		3 44	8 16	23 22	7 40	11 38	6 26	2 28	
C	3 Sun. aft. Trin.	3 44	8 16	23 19	13 14	11 52	7 10	2 41	
28		3 44	8 16	23 16	18 24	morn	7 59	2 53	
29	St. Peter.	3 45	8 15	23 13	22 51	0 9	8 52	3 5	
30	Trin. Term ends	3 45	8 15	23 9	26 9	0 36	9 51	3 16	
Days	Day increas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♀	☾ rises
1	8 33	16 7	19 31	25 21	13 42	11 30	26 27	19 46	10 a 53
7	8 42	16 26	19 42	25 53	16 21	17 14	6 8 2	6 33	10 28
13	8 46	16 30	19 53	26 25	18 59	22 58	15 39	23 3	10 3
19	8 50	16 34	20 4	26 57	21 38	28 42	25 17	10 1	9 38
25	odec. 2	16 32	20 15	27 29	24 15	4 25	4 11	56 28	15 9 12

1784.

June.

19

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. (s node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	All	day-	light.	4X38	on 6	os 59	1 n 19	1 s 8	os 22
7				4 19	o 6	1 1	1 18	o 56	2 3
13				4 o	o 6	1 3	1 17	o 43	3 36
19				3 41	o 5	1 5	1 16	o 29	4 27
25				3 22	o 4	1 6	1 15	o 15	4 29
Days	☉'s longitude	☌'s long.	☌'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	11 30	4 12	M 43	4 s 40	23 23	6X59	20 51	22 8	57 27 R 27
2	12 27	27 26	36 4	59 23	21 7	5 21	28 24	10 27	27 23
3	13 24	50 10	2 51	59 23	18 7	8 22	5 25	23 27	15
4	14 22	12 25	22 4	40 23	15 7	12 22	41 26	36 27	2
5	15 19	33 10	2 4	3 23	12 7	16 23	19 27	49 26	44
C	16 16	53 24	44 3	10 23	9 7	19 23	56 29	2 26	24
7	17 14	13 9	21 2	4 23	6 7	23 24	33 0	15 26	1
8	18 11	32 23	48 2	51 23	3 7	26 25	10 1	28 25	35
9	19 8	51 8X	2 0	n 25	23 0	29 25	47 2	41 25	6
10	20 6	9 22	1 1	37 22	56 7	33 26	24 3	53 24	34
11	21 3	27 5	46 2	43 22	53 7	36 27	2 5	7 24	1
12	22 o	45 19	17 3	38 22	50 7	39 27	39 6	20 23	27
C	22 58	3 2	35 4	21 22	47 7	41 28	16 7	34 22	54
14	23 55	21 15	40 4	49 22	43 7	43 28	53 8	47 22	21
15	24 52	38 28	33 5	2 22	40 7	45 29	30 10	0 21	48
16	25 49	55 11	14 4	59 22	36 7	47 0	8 11	14 21	15
17	26 47	11 23	44 4	42 22	33 7	49 0	45 12	27 20	45
18	27 44	27 6	2 4	13 22	29 7	51 1	22 13	40 20	18
19	28 41	43 18	9 3	32 22	25 7	53 2	0 14	54 19	53
C	29 38	58 0	7 2	42 22	21 7	54 2	37 16	7 19	31
21	30 o	36 11	58 1	45 22	17 7	55 3	14 17	20 19	13
22	1 33	27 23	46 0	44 22	13 7	56 3	52 18	33 19	0
23	2 30	41 5	33 0	s 19	22 8	56 7	4 29	19 47	52
24	3 27	54 17	25 1	22 22	4 7	57 5	6 21	0 18	47
25	4 25	7 29	28 2	22 22	0 7	57 5	44 22	14 18	D 45
26	5 22	19 11	45 3	17 21	56 7	R 57	6 21	23 27	18 51
C	6 19	31 24	23 4	4 21	52 7	57 6	58 24	40 19	0
28	7 16	42 7	25 4	40 21	47 7	57 7	36 25	54 19	12
29	8 13	53 20	55 5	2 21	43 7	56 8	13 27	7 19	30
30	9 11	3 4	53 5	7 21	39 7	56 8	50 28	21 19	54
Days	u rises	δ sets	♀ rises	♂ sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	om 42	11 a 5	3 m 9	9 a 22	21 s 20	9 s 53	23 n 9	17 n 26	23 n 5
7	o 20	10 5	3 1	8 40	21 23	9 45	22 32	19 19	21 21
13	11 a 53	10 36	2 57	rises.	21 27	9 40	21 48	20 53	19 41
19	11 29	10 23	2 54	3 m 34	21 31	9 37	20 59	22 8	18 39
25	11 4	10 7	2 57	3 6	21 36	9 38	20 4	23 0	18 34

The LUNATIONS.

Full Moon the 3d day, at 6 minutes past midnight,
 Last quarter the 9th day, at 1 minute past 3 afternoon,
 New Moon the 17th day, at 36 minutes past 8 morning,
 First quarter the 25th day, at 2 minutes past noon.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉
1		3 46	8 14	23 n 5	27 s 54	1 m 14	10 a 56	3 27
2	Visit. B. V. M.	3 46	8 14	23 0	27 43	2 12	morn	3 39
3	Dog days begin	3 47	8 13	22 55	25 32	☾ rises	o o	3 50
4	Sun. aft. Trin.	Transf. St. Mart.	22	50 21	33 9	a 45	1 5	4 0
5		3 48	8 12	22 44	16 11	10 5	2 4	4 11
6	Cam. Comm.	3 49	8 11	22 38	9 55	10 19	2 59	4 20
7		3 50	8 10	22 32	3 15	10 31	3 50	4 30
8		3 50	8 10	22 25	3 n 24	10 44	4 38	4 39
9	Camb. T. ends	3 51	8 9	22 17	9 45	10 53	5 24	4 48
10	Oxford Act	3 52	8 8	22 10	15 28	11 11	6 11	4 56
11	5 Sun. aft. Trin.	3 53	8 7	22 2	20 21	11 30	7 0	5 4
12		3 54	8 6	21 53	24 11	11 57	7 50	5 12
13		3 55	8 5	21 44	26 46	morn	8 42	5 19
14		3 56	8 4	21 35	28 0	0 34	9 35	5 26
15	Swithin	3 57	8 3	21 25	27 50	1 24	10 28	5 32
16		3 58	8 2	21 15	26 20	2 24	11 20	5 37
17	Oxf. Term ends	3 59	8 1	21 5	23 38	☾ sets	o a 9	5 43
18	6 Sun. aft. Trin.	4 1	7 59	20 55	19 57	8 a 45	o 55	5 47
19		4 2	7 58	20 44	15 30	9 0	1 39	5 51
20	Margaret	4 3	7 57	20 32	10 29	9 12	2 20	5 55
21		4 4	7 56	20 20	5 5	9 22	2 59	5 58
22	Mary Magd.	4 6	7 54	20 8	0 s 31	9 30	3 38	6 1
23		4 7	7 53	19 56	6 10	9 41	4 19	6 2
24		4 8	7 52	19 43	11 42	9 52	5 1	6 3
25	7 Sun. aft. Trin.	St. Jam	7 50	19 30	16 54	10 9	5 47	6 4
26	St. Anne, MVM.	4 11	7 49	19 17	21 30	10 31	6 37	6 4
27		4 13	7 47	19 3	25 10	11 2	7 32	6 3
28		4 14	7 46	18 49	27 30	11 49	8 33	6 2
29		4 16	7 44	18 35	28 7	morn	9 37	6 0
30		4 17	7 43	18 20	26 47	0 57	10 41	5 58
31		4 19	7 41	18 5	23 30	2 24	11 44	5 55
Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♀	H rises
1	0 4 16 30	20 26	28 22	26 52	10 8	14 11 36	18 41	8 a 43
7	0 12 16 22	20 36	28 34	29 29	15 51	24 17	12 31	8 17
13	0 24 16 10	20 47	29 6	27 7	21 35	30 50	11 1	sets
19	0 38 15 56	20 58	29 38	4 44	27 18	13 42	14 48	3 m 32
25	0 54 15 40	21 9	0 10	7 21	3 23	23 26	22 11	2 7

1784.

July.

21

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. C's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1				3X 3	on 4	1 s 8	1 n 13	os 0	3 s 48
7	All	day-	light	2 44	0 4	1 10	1 12	on 14	2 41
13				2 24	0 3	1 12	1 11	o 28	1 21
19				2 5	0 3	1 13	1 9	Q 41	0 2
25	0 45	11 7	3 20	1 46	0 2	1 15	1 8	0 53	1 n 1
Days	☉'s longitude	C's long.	C's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	10 8 13	19 f 17	4 s 53	21 35	7X 55	9 27	29 11 35	20 11 25	
2	11 5 23	4 2	4 19	21 30	7 54	10 5	0 28 48	20 58	
3	12 2 34	19 1	3 28	21 26	7 52	10 42	2 21	21 37	
C	12 59 44	4 3	2 21	21 21	7 50	11 20	3 15	22 19	
5	13 56 55	19 1	1 6	21 17	7 49	11 57	4 29	23 7	
6	14 54 6	3X 47	on 14	21 12	7 47	12 35	5 42	24 0	
7	15 51 17	18 15	1 31	21 8	7 45	13 12	6 56	24 59	
8	16 48 29	2 23	2 41	21 3	7 43	13 50	8 9	26 2	
9	17 45 41	16 10	3 39	20 59	7 40	14 27	9 23	27 9	
10	18 42 55	29 38	4 24	20 55	7 37	15 5	10 36	28 20	
C	19 40 8	12 46	4 54	20 50	7 35	15 42	11 50	29 36	
12	20 37 22	25 38	5 9	20 46	7 32	16 20	13 4	0 25 56	
13	21 34 38	8 15	5 8	20 42	7 29	16 57	14 18	2 21	
14	22 31 54	20 40	4 52	20 37	7 25	17 35	15 31	3 50	
15	23 29 10	2 54	4 23	20 33	7 22	18 12	16 45	5 23	
16	24 26 27	14 59	3 43	20 28	7 18	18 50	17 59	6 59	
17	25 23 45	26 57	2 53	20 24	7 14	19 27	19 13	8 39	
C	26 21 2	8 48	1 56	20 19	7 10	20 5	20 27	10 24	
19	27 18 22	20 36	0 54	20 15	7 6	20 42	21 41	12 12	
20	28 15 41	2 23	0 s 10	20 11	7 1	21 20	22 54	14 3	
21	29 13 0	14 11	1 14	20 6	6 57	21 57	24 8	15 57	
22	Ω 0 10 20	26 5	2 16	20 2	6 53	22 35	25 22	17 53	
23	1 7 41	8 8	3 12	19 58	6 47	23 12	26 36	19 51	
24	2 5 1	20 25	4 1	19 54	6 42	23 50	27 50	21 51	
C	3 2 22	3 1	4 39	19 50	6 37	24 28	29 4	23 54	
26	3 59 44	16 0	5 5	19 45	6 31	25 5	0 18	25 56	
27	4 57 5	29 24	5 15	19 41	6 26	25 43	1 32	28 1	
28	5 54 28	13 f 17	5 7	19 37	6 20	26 21	2 46	0 6	
29	6 51 50	27 37	4 41	19 33	6 14	26 58	4 0	2 11	
30	7 49 14	12 21	3 55	19 29	6 8	27 36	5 14	4 16	
31	8 46 39	27 24	2 52	19 25	6 2	28 14	6 28	6 22	
Days	u rises	δ sets	♀ rises	♂ rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	10 a 39	9 a 52	2 m 59	2 m 45	21 s 30	9 s 40	19 n 5	23 n 28	19 n 20
7	10 14	9 35	3 7	2 33	21 45	9 45	18 23	23 31	20 41
13	9 50	9 19	3 16	2 32	21 49	9 52	16 54	23 10	22 6
19	9 25	9 3	3 29	2 48	21 54	10 3	15 42	22 24	22 53
25	9 1	8 46	3 44	3 19	21 58	10 15	14 27	21 14	22 21

The LUNATIONS.

Full Moon the 1st day, at 11 minutes past 7 morning,
 Last quarter the 7th day, at 59 minutes past 11 at night,
 New Moon the 15th day, at 18 minutes past midnight,
 First quarter the 23d day, at 9 minutes past 11 at night,
 Full Moon the 30th day, at 57 minutes past 2 afternoon.

M	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☉'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
C 8	Sun. aft. Trin.	Lamm.	7 40	17 n 50	18 s 36	☾ rises	morn	5 51	
2		4 22	7 38	17 35	12 29	8 a 22	0 43	5 47	
3		4 24	7 36	17 19	5 42	8 36	1 37	5 42	
4		4 25	7 35	17 3	1 n 14	8 47	2 28	5 36	
5		4 27	7 33	16 46	7 56	9 2	3 17	5 30	
6	Transfiguration	4 29	7 31	16 30	14 3	9 16	4 6	5 23	
7	Pr. Amelia b.	4 30	7 30	16 13	19 18	9 34	4 55	5 16	
C 9	Sun. aft. Trin.	4 32	7 28	15 56	23 28	9 58	5 46	5 8	
9		4 34	7 26	15 38	26 23	10 32	6 38	5 0	
10	St. Laurence.	4 35	7 25	15 21	27 56	11 18	7 32	4 51	
11	Pr. Brunsw. bo.	Dog-days end	23 15	3 28	4 morn	8 25	4 42		
12	Pr. Wales born	O. Lam.	7 21	14 45	26 51	0 16	9 17	4 32	
13		4 40	7 20	14 26	24 26	1 24	10 7	4 21	
14		4 42	7 18	14 8	20 58	2 37	10 55	4 10	
C 10	S. aft. Trin.	4 44	7 16	13 49	16 41	3 53	11 20	3 59	
16	Pr. Fred. born	4 46	7 14	13 30	11 47	☾ sets	0 a 21	3 47	
17		4 48	7 12	13 10	6 26	7 a 32	1 1	3 34	
18		4 49	7 11	12 51	0 51	7 42	1 41	3 21	
19		4 51	7 9	12 31	4 s 48	7 52	2 21	3 8	
20		4 53	7 7	12 11	10 22	8 15	3 2	2 54	
21	Pr. Wm. Hen. b.	4 55	7 5	11 51	15 37	8 20	3 46	2 39	
C 11	S. aft. Trin.	4 57	7 3	11 31	20 19	8 38	4 34	2 40	
23		4 59	7 1	11 10	24 12	9 4	5 26	2 8	
24	St. Bartholomew	5 0	7 0	10 50	26 56	9 43	6 23	1 53	
25		5 2	6 58	10 29	28 9	10 38	7 24	1 36	
26		5 4	6 56	10 8	27 36	11 56	8 27	1 19	
27		5 6	6 54	9 47	25 11	morn.	9 29	1 2	
28	St. Augustine	5 8	6 52	9 26	21 0	1 27	10 29	0 45	
C 12	S. aft. Trin.	Behead. J. Bap.	9 4	15 25	3 2	11 26	0 27		
30		5 12	6 48	8 43	8 51	☾ rises	morn	0 9	
31		5 14	6 46	8 21	1 50	7 a 1	0 19	oaf. 10	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	☾ sets
1	1 11	15 21	21 22	0 48	10 25	9 44	4 49	4 31	2 m 37
7	1 31	15 3	21 33	1 21	13 3	15 29	14 34	5 25	2 13
13	1 51	14 43	21 45	1 53	15 41	21 15	24 19	0 57	1 48
19	2 13	14 21	21 54	2 25	13 19	27 1	4 5	22 23	1 24
25	2 25	13 50	22 5	2 58	20 57	2 49	13 49	11 8	1 0

1784.

August.

23

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. ☾'s node	h's latitude	☿'s latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	1 23	10 34	2 58	12 24	on 1	1 s 16	1 n 6	1 n 5	1 n 40
7	1 47	10 13	2 46	1 5	o 1	1 18	1 4	1 13	1 45
13	2 9	9 51	2 34	o 46	o o	1 19	1 2	1 19	1 27
19	2 29	9 31	2 25	o 27	o o	1 20	1 1	1 23	o 55
25	2 47	9 13	2 18	o 8	o s 1	1 20	o 59	1 25	o 12
Days	☉'s longitude	☾'s long.	☾'s latitude	h's long.	☿'s long.	♂'s long.	♀'s long.	♂'s long.	♀'s long.
C 1	Ω 9 44 4	12 36	1 s 37	19 21	5 56	28 52	7 42	8 28	8 28
2	10 41 30	27 47	o 15	19 17	5 49	29 30	8 56	10 33	10 33
3	11 38 58	12 48	1 n 8	19 13	5 43	om 8	10 10	12 37	12 37
4	12 36 26	27 32	2 25	19 9	5 37	o 46	11 24	14 38	14 38
5	13 33 56	11 54	3 30	19 4	5 30	1 24	12 38	16 38	16 38
6	14 31 27	25 50	4 21	19 o	5 23	1 2	13 52	18 38	18 38
7	15 29 o	9 22	4 56	18 57	5 16	2 40	15 6	20 38	20 38
C 8	16 26 34	22 29	5 14	18 53	5 9	3 18	16 20	22 36	22 36
9	17 24 10	5 16	5 16	18 49	5 2	3 56	17 34	24 32	24 32
10	18 21 47	17 45	5 3	18 46	4 55	4 34	18 49	26 27	26 27
11	19 19 26	om o	4 36	18 43	4 48	5 12	20 3	28 20	28 20
12	20 17 6	12 4	3 54	18 39	4 40	5 50	21 17	om 12	om 12
13	21 14 48	23 59	3 8	18 36	4 33	6 28	22 32	2 2	2 2
14	22 12 31	5 50	2 12	18 33	4 25	7 6	23 46	3 51	3 51
C 15	23 10 16	17 37	1 10	18 29	4 18	7 44	25 o	5 39	5 39
16	24 8 2	29 25	o 5	18 26	4 10	8 22	26 15	7 25	7 25
17	25 5 50	11 13	1 s o	18 23	4 3	9 1	27 29	9 10	9 10
18	26 3 38	23 7	2 3	18 20	3 55	9 39	28 43	10 54	10 54
19	27 1 28	5 6	3 2	18 17	3 47	10 17	29 57	12 35	12 35
20	27 59 20	17 15	3 53	18 14	3 40	10 55	1m 12	14 15	14 15
21	28 57 12	29 37	4 34	18 11	3 32	11 33	2 26	15 44	15 44
C 22	29 55 6	12 15	5 2	18 8	3 24	12 12	3 40	17 33	17 33
23	m 0 53 1	25 12	5 17	18 5	3 16	12 50	4 54	19 10	19 10
24	1 50 57	8 31	5 15	18 3	3 8	13 28	6 9	20 45	20 45
25	2 48 54	22 14	4 55	18 1	3 o	14 6	7 23	22 19	22 19
26	3 46 52	6 21	4 18	17 58	2 53	14 45	8 37	23 51	23 51
27	4 44 52	20 53	3 23	17 56	2 45	15 23	9 52	25 22	25 22
28	5 42 53	5 43	2 13	17 54	2 37	16 1	11 6	26 52	26 52
C 29	6 40 56	20 48	o 53	17 51	2 29	16 40	12 20	28 21	28 21
30	7 39 o	5 58	on 31	17 49	2 21	17 18	13 35	29 48	29 48
31	8 37 6	21 4	1 52	17 47	2 13	17 57	14 49	1 14	1 14
Days	☿'s rises	♂'s sets	♀'s rises.	♂'s rises	h's declin.	☿'s declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	8 a 31	8 a 27	4 m 4	4 m 9	22 s 3	10 s 32	12 n 55	19 n 24	19 n 47
7	8 7	8 10	4 23	sets	22 7	10 48	11 32	17 30	16 17
13	7 44	7 55	sets	7 a 50	22 10	11 5	10 7	15 17	12 7
19	7 21	7 39	7 a 23	7 42	22 13	11 22	8 39	12 48	7 41
25	sets	7 24	7 15	7 32	22 15	11 40	7 10	10 7	3 14

The LUNATIONS.

Last quarter the 6th day, at 20 minutes past 2 afternoon,
 New Moon the 14th day, at 45 minutes past 4 afternoon,
 First quarter the 22d day, at 23 minutes past 8 morning,
 Full Moon the 28th day, at 46 minutes past 11 at night.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉	
1	Giles	5 16	6 44	7 n 59	5 n 11	7 a 13	1 m 10	0 29	
2	Lond. bur. 1666	5 18	6 42	7 37	11 46	7 27	2 2	0 48	
3		5 19	6 41	7 15	17 33	7 46	2 53	1 7	
4		5 21	6 39	6 53	22 15	8 8	3 45	1 27	
5	13 S. aft. Trin.	5 23	6 37	6 30	25 39	8 40	4 37	1 47	
6		5 25	6 35	6 8	27 38	9 21	5 32	2 7	
7	Enurachus	5 27	6 33	5 45	28 10	10 16	6 27	2 27	
8	Nativ. B.V. M.	5 29	6 31	5 23	27 18	11 23	7 20	2 47	
9		5 31	6 29	5 0	25 10	morn	8 11	3 7	
10		5 33	6 27	4 37	21 58	0 34	8 59	3 28	
11		5 35	6 25	4 14	17 53	1 45	9 45	3 49	
12	14 S. aft. Trin.	5 37	6 23	3 51	13 7	2 59	10 27	4 9	
13		5 39	6 21	3 28	7 52	4 7	11 8	4 30	
14	Holy Cross	5 41	6 19	3 5	2 19	☾ sets	11 49	4 51	
15	Ember Week	5 43	6 17	2 41	3 s 22	6 a 10	0 a 29	5 12	
16		5 45	6 15	2 19	9 0	6 22	1 10	5 33	
17	Lambert	5 47	6 13	1 55	14 21	6 35	1 54	5 54	
18		5 49	6 11	1 32	19 12	6 53	2 40	6 15	
19	15 S. aft. Trin.	5 51	6 9	1 9	23 17	7 16	3 31	6 36	
20		5 53	6 7	0 45	26 17	7 50	4 26	6 57	
21	St. Matthew	5 54	6 6	0 22	27 54	8 40	5 25	7 17	
22	K. Geo. III. cro.	5 56	6 4	0 s 1	27 54	9 48	6 24	7 38	
23		5 58	6 2	0 25	26 9	11 13	7 24	7 59	
24	Equal d. and n.	6 0	6 0	0 48	22 42	morn	8 23	8 19	
25		6 2	5 58	1 12	17 47	0 44	9 19	8 39	
26	16 S. aft. Trin.	St. Cyprian	56	1 35	11 45	2 20	10 13	9 0	
27		6 6	5 54	1 59	5 1	3 49	11 5	9 19	
28		6 8	5 52	2 22	2 n 0	☾ rises	11 56	9 39	
29	St. Michael. Pres. Ch. Aug. Mat. o	2 45	8 50	5 a 42	morn	9 59			
30	St. Jerome	6 12	5 48	3 9	15 4	5 58	0 47	10 18	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ☿	☿ sets
1	3 1	13 33	22 18	3 35	24 3	9 35	25 11	1 7	0 m 34
7	3 25	13 9	22 29	4 8	26 43	15 25	4 54	17 37	0 11
13	3 49	12 45	22 40	4 40	29 23	21 15	14 35	4 21	11 a 49
19	4 11	12 23	22 51	5 13	2 5	27 7	24 15	22 3	11 26
25	4 35	11 50	23 1	5 45	4 46	3 v c	3 m 53	11 38	11 4

1784.

September.

25

Days	Day lig. begins	Day lig. ends	Dura. twilig.	Pl. C's node	h's latitude	4's latitude	3's latitude	2's latitude	1's latitude
1	3 7	8 5	2 11	29 ^m 46	0 5	1 5 2	0 5 5	1 2 4	0 5 44
7	3 24	8 36	2 6	29 27	0 2	1 21	0 54	1 21	1 35
13	3 37	8 23	2 4	29 7	0 2	1 21	0 52	1 15	2 24
19	3 52	8 8	2 1	28 48	0 3	1 21	0 50	1 8	3 7
25	4 5	7 55	2 0	28 20	0 5	1 20	0 47	0 58	3 35
Days	☉'s longitude	☌'s long.	☍'s latitude	h's long.	4's long.	3's long.	2's long.	1's long.	☉'s long.
1	9 35 14	5 56	3 n 5	17 46	2 5	18 35	16 4	2 39	
2	10 33 24	20 28	4 4	17 44	1 57	19 14	17 18	4 2	
3	11 31 35	4 35	4 46	17 42	1 49	19 52	18 33	5 24	
4	12 29 48	18 15	5 10	17 41	1 42	20 31	19 47	6 45	
C	13 28 4	1 28	5 17	17 39	1 34	21 9	21 2	8 4	
6	14 26 22	14 16	5 8	17 37	1 26	21 48	22 16	9 21	
7	15 24 41	26 44	4 4	17 36	1 19	22 26	23 31	10 37	
8	16 23 3	8 55	4 8	17 35	1 12	23 5	24 45	11 51	
9	17 21 27	20 53	3 22	17 34	1 4	23 44	26 13	13 3	
10	18 19 54	2 44	2 27	17 33	0 57	24 23	27 14	14 14	
11	19 18 23	14 31	1 27	17 32	0 49	25 1	28 29	15 23	
C	20 16 53	26 18	0 23	17 31	0 42	25 40	29 43	16 30	
13	21 15 25	8 8	0 5 43	17 30	0 35	26 19	30 58	17 35	
14	22 14 0	20 3	1 46	17 30	0 28	26 58	2 12	18 37	
15	23 12 37	2 5	2 46	17 29	0 22	27 37	3 27	19 36	
16	24 11 16	14 17	3 39	17 29	0 15	28 15	4 41	20 33	
17	25 9 56	26 39	4 22	17 28	0 9	28 54	5 56	21 28	
18	26 8 38	9 13	4 53	17 28	0 3	29 33	7 10	22 19	
C	27 7 22	22 0	5 11	17 28	29 56	0 12	8 25	23 7	
20	28 6 8	5 2	5 13	17 28	29 50	0 51	9 40	23 51	
21	29 4 55	18 21	4 58	17 28	29 45	1 30	10 54	24 31	
22	30 3 44	1 58	4 26	17 28	29 39	2 9	12 9	25 9	
23	1 2 34	15 54	3 39	17 28	29 33	2 48	13 24	25 42	
24	2 1 26	0 8	2 37	17 28	29 28	3 27	14 39	26 10	
25	3 0 20	14 39	1 23	17 28	29 22	4 6	15 54	26 31	
C	3 59 16	29 23	0 4	17 29	29 17	4 45	17 8	26 46	
27	4 58 14	14 16	1 n 17	17 29	29 12	5 24	18 23	26 56	
28	5 57 13	29 10	2 32	17 30	29 7	6 3	19 37	27 1	
29	6 56 14	13 56	3 37	17 31	29 2	6 42	20 52	26 57	
30	7 55 17	28 28	4 26	17 32	28 58	7 22	22 6	26 48	
Days	☌ sets	☍ sets	☉ sets	☉ sets	h's declin.	4's declin.	3's declin.	2's declin.	☉ declin.
1	4 m 36	7 a 5	7 a 4	7 a 19	22 s 18	12 s 0	5 n 23	6 n 48	1 s 44
7	4 11	6 48	6 53	7 6	22 20	12 17	3 50	3 49	5 39
13	3 45	6 34	6 44	6 51	22 21	12 33	2 16	0 46	9 7
19	3 21	6 19	6 35	6 34	22 22	12 46	0 41	2 s 16	11 53
25	2 56	6 2	6 25	6 15	22 23	12 57	0 55	5 22	13 34

The LUNATIONS.

Last quarter the 6th day, at 38 minutes past 4 morning,
 New Moon the 14th day, at 49 minutes past 8 morning,
 First quarter the 21st day, at 27 minutes past 4 evening,
 Full Moon the 28th day, at 27 minutes past 10 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉	
1	Remigius	6 14	5 46	3 s 32	20 n 22	6 a 18	1 m 40	10 37	
2		6 16	5 44	3 55	24 24	6 46	2 34	10 55	
3	C 17 S. aft. Trin.	6 18	5 42	4 16	26 58	7 24	3 28	11 14	
4		6 20	5 40	4 42	28 1	8 16	4 25	11 32	
5		6 22	5 38	5 6	27 35	9 17	5 21	11 49	
6	Faith	6 24	5 36	5 28	25 49	10 29	6 13	12 6	
7		6 26	5 34	5 51	22 54	11 43	7 2	12 23	
8		6 28	5 32	6 14	19 3	morn	7 50	12 39	
9	St. Denys	6 30	5 30	6 37	14 29	0 59	8 33	12 55	
10	C 13 S. aft. Trin.	Camb.	T. beg.	7 0	9 23	2 9	9 14	13 10	
11	Oxf. Term beg.	6 34	5 26	7 22	3 55	3 18	9 55	13 25	
12		6 36	5 24	7 45	1 s 45	4 27	10 35	13 40	
13	Tr. K. Edward	6 38	5 22	8 7	7 25	5 38	11 16	13 53	
14		6 40	5 20	8 30	12 54	D sets	11 59	14 6	
15		6 42	5 18	8 52	17 57	5 a 5	12 a 45	14 19	
16		6 43	5 17	9 14	22 16	5 29	1 35	14 31	
17	C 19 S. aft. Trin.	Etheld.	5 15	9 36	25 33	6 1	2 29	14 43	
18	St. Luke	6 47	5 13	9 58	27 30	6 46	3 27	14 53	
19		6 49	5 11	10 19	27 52	7 46	4 26	15 4	
20		6 51	5 9	10 41	26 33	9 3	5 24	15 13	
21		6 53	5 7	11 2	23 35	10 29	6 22	15 22	
22		6 55	5 5	11 24	19 12	11 56	7 17	15 31	
23		6 57	5 3	11 45	13 41	morn	8 10	15 39	
24	C 20 S. aft. Trin.	6 59	5 1	12 5	7 23	1 25	9 0	15 46	
25	K.G.III. Acces.	Crispin	4 50	12 26	0 40	2 51	9 49	15 52	
26	K.Geo.III. Pro.	7 2	4 58	12 47	6 n 5	4 18	10 39	15 57	
27		7 4	4 57	13 7	12 30	5 46	11 30	16 2	
28	St. Simon & Jude	7 6	4 54	13 27	18 10	D rises	morn	16 6	
29		7 8	4 52	13 47	22 44	4 a 50	0 24	16 10	
30		7 10	4 50	14 6	25 57	5 23	1 19	16 12	
31	C 21 S. aft. Trin.	7 12	4 48	14 26	27 36	6 10	2 16	16 14	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h sets
1	4 59	11 35	23 12	6 17	7 22	8 54	13 30	4 12	10 a 42
7	5 23	11 10	23 23	6 50	10 12	14 50	23 5	1 19	10 22
13	5 45	10 48	23 34	7 22	12 5	20 47	2 43	3 8	10 1
19	6 9	10 24	23 45	7 55	15 4	26 45	12 10	9 11	9 40
25	6 31	10 23	23 56	8 27	18 20	28 44	17 41	17 56	9 10

1784.

October.

27

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. q's node	h's latitude	U's latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	4 18	7 42	1 56	28 ^m 10	0 s 4	1 s 20	0 n 45	0 n 46	3 s 32
7	4 31	7 29	1 56	27 51	0 4	1 16	0 42	0 33	2 36
13	4 43	7 17	1 57	27 32	0 5	1 18	0 36	0 19	0 43
19	4 55	7 5	1 57	27 13	0 5	1 17	0 37	0 4	1 n 6
25	5 6	6 54	1 58	26 54	0 5	1 16	0 34	0 s 11	2 2
Day	☉'s longitude	☽'s long.	☾'s latitude	h's long.	U's long.	♂'s long.	♀'s long.	♂'s long.	♀'s long.
1	8 54 22	12 8 39	4 n 57	17 35	28 ^m 53	8 1	23 20	26 31	26 31
2	9 53 31	26 24	5 10	17 34	28 49	8 41	24 35	26 8	26 8
3	10 52 41	9 11 42	5 6	17 36	28 45	9 21	25 50	25 35	25 35
4	11 51 53	22 34	4 46	17 37	28 42	10 0	27 4	24 50	24 50
5	12 51 8	5 20 4	4 13	17 39	28 38	10 39	28 19	24 0	24 0
6	13 50 25	17 16	3 29	17 40	28 34	11 19	29 33	23 4	23 4
7	14 49 45	29 14	2 37	17 41	28 31	11 58	om 48	22 2	22 2
8	15 49 7	11 12 4	1 38	17 43	28 28	12 38	2 20	20 56	20 56
9	16 48 32	22 50	0 36	17 44	28 25	13 18	3 17	19 46	19 46
10	17 47 50	4 11 19	0 s 28	17 46	28 23	13 57	4 31	18 31	18 31
11	18 47 28	16 33	1 31	17 48	28 20	13 37	5 46	17 19	17 19
12	19 46 59	28 36	2 30	17 50	28 18	15 17	7 1	16 10	16 10
13	20 46 33	10 50	3 24	17 52	28 15	15 56	8 15	15 3	15 3
14	21 46 9	23 18	4 8	17 55	28 13	16 36	9 30	13 59	13 59
15	22 45 47	5 11 58	4 41	17 57	28 11	17 15	10 44	13 8	13 8
16	23 45 26	18 52	5 1	17 59	28 10	17 55	11 59	12 32	12 32
17	24 45 7	1 1 58	5 5	18 2	28 8	18 34	13 14	12 37	12 37
18	25 44 50	15 16	4 53	18 5	28 7	19 14	14 28	12 40	12 40
19	26 44 35	28 46	4 24	18 7	28 6	19 54	15 43	11 32	11 32
20	27 44 22	12 25 27	3 40	18 10	28 6	20 34	16 57	11 D 40	11 D 40
21	28 44 11	26 19	2 43	18 13	28 5	21 14	18 12	11 52	11 52
22	m 0 44	1 10 21	1 35	18 16	28 5	21 54	19 26	12 12	12 12
23	0 43 53	24 34	0 21	18 19	28 4	22 34	20 41	12 43	12 43
24	1 43 46	8 55	on 56	18 22	28 4	23 14	21 55	13 25	13 25
25	2 43 41	23 23	2 9	18 25	28 4	23 54	23 10	14 18	14 18
26	3 43 38	7 52	3 14	18 29	28 5	24 34	24 25	15 19	15 19
27	4 43 36	22 18	4 6	18 32	28 D	25 14	25 39	16 22	16 22
28	5 43 36	6 35	4 42	18 36	28 5	25 54	26 54	17 28	17 28
29	6 43 38	20 35	5 0	18 39	28 7	26 35	28 8	18 40	18 40
30	7 43 42	4 11 16	5 1	18 43	28 9	27 15	29 23	19 56	19 56
31	8 43 48	17 33	4 44	18 46	28 11	27 55	0 38	21 21	21 21
Day	U's sets	♂'s rises	♀'s sets	♂'s sets	h's declin.	U's declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	2 m 32	rises	6 a 16	5 a 53	22 s 22	13 s 7	2 s 30	8 s 22	13 s 32
7	2 7	6 m 5	6 7	5 32	22 22	13 14	4 5	11 15	11 0
13	1 43	6 6	5 58	rises	22 21	13 15	5 40	13 58	6 36
19	1 13	6 7	5 50	5 m 16	22 19	13 21	7 13	16 30	3 33
25	0 55	6 7	5 44	5 8	22 17	13 21	8 45	18 46	3 46

The LUNATIONS.

Last quarter the 4th day, at 18 minutes past midnight,
 New Moon the 12th day, at 42 minutes past 11 at night,
 First quarter the 19th day, at 6 minutes past midnight,
 Full Moon the 26th day, at 20 minutes past 11 at night.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin	☾'s declin.	☾ & sets	☾ South	Clock aft. ☉	
1	All Saints	7 13	4 47	14 s 45	27 n 42	7 a 9	3 m 13	16 15	
2	Pr. Edw. born	All Soul	4 45	15 4	26 21	8 13	4 7	16 15	
3	Prs. Sophia born	7 17	4 43	15 22	23 46	9 29	4 59	16 15	
4		7 19	4 41	15 41	20 11	10 46	5 47	16 13	
5	Powder Plot	7 21	4 39	15 59	15 49	11 55	6 32	16 11	
6	Mich. Term beg.	Leonard	4 38	16 17	10 54	morn	7 14	16 7	
7	22 S. aft. Trin.	D. Camb. b.	36	16 35	5 35	1 6	7 54	16 3	
8	Prs. Aug. Sop. b.	7 26	4 34	16 52	0 0	2 15	8 34	15 58	
9	Ld. Mayor's day	7 27	4 33	17 9	5 s 38	3 25	9 15	15 52	
10		7 29	4 31	17 26	11 11	4 37	9 56	15 46	
11	St. Martin	7 31	4 29	17 42	16 25	5 53	10 40	15 38	
12		7 32	4 28	17 59	21 0	☾ sets	11 29	15 30	
13	Britius	7 34	4 26	18 14	24 38	4 a 1	12 a 22	15 20	
14	23 S. aft. Trin.	7 35	4 25	18 30	26 59	4 43	1 19	15 10	
15	Machutus	7 37	4 23	18 45	27 45	5 36	2 19	14 59	
16		7 38	4 22	19 0	26 47	6 49	3 19	14 47	
17	Hugh	7 40	4 20	19 15	24 8	8 16	4 17	14 35	
18		7 41	4 19	19 29	20 1	9 43	5 12	14 21	
19		7 43	4 17	19 41	14 47	11 10	6 4	14 7	
20	Edmund	7 44	4 16	19 56	8 45	morn	6 54	13 52	
21	24 S. aft. Trin.	7 46	4 14	20 9	2 17	0 35	7 43	13 36	
22	Cecil. O. Mart. d.	7 47	4 13	20 22	4 n 16	1 58	8 30	13 20	
23	St. Clement	7 48	4 12	20 34	10 35	3 23	9 18	13 3	
24		7 50	4 10	20 46	16 21	4 47	10 9	12 45	
25	D. Glouc. born	7 51	4 9	20 58	21 12	6 10	11 2	12 26	
26		7 52	4 8	21 9	24 51	☾ rises	11 57	12 6	
27		7 53	4 7	21 20	27 3	3 a 55	morn	11 46	
28	Advent Sunday	7 54	4 6	21 30	27 41	4 48	0 54	11 25	
29	Mich. Term ends	7 56	4 4	21 40	26 49	5 53	1 50	11 3	
30	St. Andrew	7 57	4 3	21 50	24 36	7 6	2 43	10 41	
Days	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h sets
1	6 57	9 37	24 9	9 8	21 24	9 8	24 46	25 50	8 a 54
7	7 19	9 15	24 19	9 38	24 35	15 46	12 15	23 2	8 32
13	7 39	8 55	24 30	10 11	27 27	21 48	21 44	15 40	8 10
19	7 58	8 36	24 41	10 43	27 52	27 52	1 13	5 10	7 48
25	8 14	8 20	24 52	11 16	3 11	3 11	10 42	22 47	7 26

1784.

November.

29

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. (s node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	5 17	6 43	1 59	26 32	0 s 6	1 s 15	0 n 31	0 s 30	2 n 6
7	5 25	6 35	2 26	26 13	0 6	1 14	0 28	0 45	1 42
13	5 34	6 26	2 32	25 54	0 7	1 13	0 25	1 0	1 5
19	5 41	6 19	2 5	25 35	0 7	1 12	0 21	1 13	0 24
25	5 48	6 12	2 7	25 16	0 8	1 10	0 18	1 25	0 s 16
Days	☉'s longitude.	☽'s long.	☾'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	m 9 43 57	0 26 26	4 n 14	18 50	28 13	28 36	1 52	22 45	
2	10 44 8	12 58	3 32	18 54	28 16	29 16	3 7	24 12	
3	11 44 21	25 11	2 41	18 58	28 18	29 56	4 21	25 41	
4	12 44 35	7 11	1 44	19 2	28 20	30 37	5 3	27 11	
5	13 44 51	19 1	0 43	19 6	28 23	1 17	6 50	28 42	
6	14 45 10	0 48	0 s 20	19 10	28 25	1 57	8 5	om 15	
C	15 45 31	12 38	1 21	19 15	28 27	2 38	9 19	1 49	
8	16 45 54	24 35	2 20	19 19	28 30	3 18	10 34	3 23	
9	17 46 19	6 44	3 14	19 23	28 34	3 59	11 48	4 58	
10	18 46 46	19 9	3 59	19 28	28 37	4 40	13 3	6 34	
11	19 47 15	1 m 51	4 33	19 33	28 41	5 21	14 17	8 9	
12	20 47 45	14 51	4 54	19 38	28 45	6 2	15 32	9 45	
13	21 48 17	28 8	5 0	19 43	28 49	6 43	16 46	11 21	
C	22 48 51	11 39	4 49	19 48	28 54	7 25	18 1	12 57	
15	23 49 26	25 22	4 22	19 53	28 58	8 4	19 15	14 33	
16	24 50 3	9 14	3 39	19 58	29 3	8 45	20 30	16 8	
17	25 50 41	23 12	2 42	20 3	29 7	9 26	21 44	17 44	
18	26 51 20	7 13	1 35	20 8	29 12	10 7	22 58	19 19	
19	27 52 0	21 17	0 22	20 13	29 17	10 48	24 12	20 54	
20	28 52 41	5 22	0 n 52	20 18	29 23	11 25	25 27	22 30	
C	29 53 23	19 27	2 3	20 24	29 28	12 10	26 41	24 5	
22	1 0 54 6	3 33	3 7	20 29	29 34	12 51	27 55	25 40	
23	1 54 50	17 36	3 59	20 34	29 40	13 32	29 10	27 15	
24	2 55 36	1 35	4 36	20 40	29 46	14 14	30 24	28 49	
25	3 56 23	15 26	4 57	20 45	29 52	14 55	1 38	0 24	
26	4 57 11	29 5	5 0	20 51	29 58	15 36	2 53	1 59	
27	5 58 0	12 28	4 46	20 56	0 5	16 17	4 7	3 33	
C	6 58 50	25 33	4 18	21 2	0 12	16 58	5 21	5 8	
29	7 59 41	8 20	3 37	21 8	0 19	17 39	6 36	6 43	
30	9 0 33	20 48	2 47	21 14	0 26	18 31	7 50	8 16	
Days	u's sets	δ's rises	♀'s sets	♂'s rises	h's declin.	u's decl. n.	δ's declin.	♀'s decl. n.	♂'s declin.
1	om 30	6 m 6	5 a 38	5 m 30	22 s 14	13 s 16	10 s 31	21 s 3	6 s 54
7	0 7	6 6	5 34	6 0	22 11	13 10	11 58	22 37	10 31
13	11 a 45	6 5	5 34	6 33	22 8	13 2	13 23	23 48	14 13
19	11 23	6 4	5 39	7 4	22 4	12 51	14 44	24 33	17 37
25	11 1	6 2	5 42	7 25	22 1	12 58	15 46	25 24	20 22

The LUNATIONS.

Last quarter the 4th day, at 52 minutes past 9 at night,
 New Moon the 12th day, at 6 minutes past 1 afternoon,
 First quarter the 19th day, at 2 minutes past 8 morning,
 Full Moon the 26th day, at 48 minutes past 2 afternoon.

M D	Sundays & othe remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉	
1		7 58	4 2	21 59	21 17	8 a 19	3 m 33	10 18	
2		7 59	4 1	22 8	17 7	9 32	4 19	9 55	
3		8 0	4 0	22 16	12 21	10 42	5 2	9 31	
4		8 0	4 0	22 24	7 9	11 48	5 42	9 6	
5	C 3 S. in Advent	8 1	3 59	22 31	1 41	morn	6 22	8 40	
6	Nicholas	8 2	3 58	22 38	3 53	1 0	7 2	8 14	
7		8 3	3 57	22 45	9 23	2 12	7 42	7 48	
8	Conception	8 4	3 56	22 51	14 40	3 25	8 24	7 21	
9		8 4	3 56	22 56	19 28	4 41	9 10	6 54	
10		8 5	3 55	23 2	23 28	5 59	10 1	6 26	
11		8 5	3 55	23 6	26 18	7 23	10 56	5 58	
12	C 3 S. in Advent	8 6	3 54	23 11	27 37	☾ sets	11 55	5 29	
13	Lucy	8 6	3 54	23 14	27 10	4 a 25	0 a 58	5 0	
14		8 7	3 53	23 18	24 54	5 48	1 58	4 31	
15	Ember Week	8 7	3 53	23 21	21 2	7 16	2 56	4 2	
16	Camb. T. ends	O Sapientia	53 23	23 15	54 8	45 3	50 3	32	
17	Oxf. Term ends	8 8	3 52	23 25	9 55	10 11	4 41	3 2	
18		8 8	3 52	23 27	3 28	11 35	5 29	2 32	
19	C 4 S. in Advent	8 8	3 52	23 28	3 n 5	morn	6 16	2 2	
20		8 8	3 52	23 28	9 24	0 57	7 3	1 32	
21	St. Thomas	Sho. d.	3 52	23 28	15 11	2 20	7 51	1 2	
22		8 8	3 52	23 28	20 9	3 44	8 42	0 32	
23		8 8	3 52	23 27	24 2	5 7	9 36	0 2	
24		8 8	3 52	23 25	26 35	6 26	10 32	obe 27	
25	Christmas day	8 7	3 53	23 24	27 39	7 32	11 27	0 57	
26	C 1 Sun. aft. Christ.	St. Stephen	53 23	21 27	13 1	☾ rises	morn	1 27	
27	St. John	8 7	3 53	23 19	25 23	4 a 35	0 21	1 56	
28	Innocents	8 6	3 53	23 15	22 21	5 49	1 12	2 26	
29		8 6	3 54	23 12	18 24	7 3	2 0	2 55	
30		8 5	3 55	23 7	13 45	8 14	2 44	3 24	
31	Silvester	8 5	3 55	23 3	8 39	9 23	3 25	3 53	
Days	Day decreaf.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ☾	Helioc. long. ♀	Helioc. long. ♂	☾ sets
1	8 28	8 6	25 3	11 48	6 m 6	10 11	20 11	9 f 28	7 a 3
7	8 40	7 54	25 14	12 21	9 3	16 7	29 41	26 0	6 39
13	8 46	7 48	25 25	12 54	12 12	22 14	0 12	13 6	6 16
19	8 50	7 44	25 36	13 26	15 12	28 21	18 44	1 40	5 52
25	o inc. 2	7 46	25 47	13 59	18 2	4 28	28 15	22 37	4 29

1784.

December.

31

Days	Day lig. begins	Day lig. ends	Durat. twilg.	Pl. ☾'s node	h's latitude	☿'s latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	5 54	6 6	2 8	24 ⁵⁶	0 8	1 9	0 15	1 36	0 55
7	5 57	6 3	2 10	24 37	0 8	1 9	0 11	1 44	1 27
13	5 59	6 1	2 12	24 18	0 9	1 8	0 8	1 49	1 53
19	6 1	5 59	2 11	23 59	0 9	1 7	0 4	1 52	2 9
25	6 1	5 59	2 11	23 40	0 10	1 6	0 0	1 52	2 9
Days	☉'s longitude	☿'s long.	♂'s latitude	h's long.	☿'s long.	♂'s long.	♀'s long.	♂'s long.	♀'s long.
1	♂ 10 1 27	30 1	1 n 40	21 20	0 33	19 3	9 4	9 4	51
2	11 2 22	14 59	0 48	21 26	0 41	19 45	10 19	11 25	
3	12 3 19	26 50	0 15	21 32	0 48	20 26	11 33	12 59	
4	13 4 17	38 50	1 17	21 38	0 56	21 7	12 47	14 33	
C	14 5 16	20 28	2 16	21 45	1 3	21 49	14 1	16 8	
6	15 6 16	2 26	3 10	21 51	1 11	22 31	15 15	17 42	
7	16 7 18	14 37	3 56	21 57	1 19	23 13	16 29	19 16	
8	17 8 21	27 6	4 32	22 3	1 28	23 54	17 43	20 51	
9	18 9 25	9 55	4 55	22 9	1 36	24 36	18 57	22 25	
10	19 10 30	23 8	5 4	22 15	1 44	25 18	20 11	24 0	
11	20 11 36	6 42	4 55	22 22	1 53	26 0	21 25	25 35	
C	21 12 43	20 36	4 30	22 28	2 2	26 42	22 39	27 10	
13	22 13 51	4 46	3 47	22 34	2 11	27 24	23 55	28 45	
14	23 14 58	19 6	2 50	22 41	2 20	28 6	25 7	29 20	
15	24 16 6	3 31	1 41	22 47	2 30	28 48	26 21	1 55	
16	25 17 15	17 54	0 26	22 54	2 39	29 30	27 35	3 30	
17	26 18 24	2 13	0 n 51	23 0	2 49	0 12	28 49	5 5	
18	27 19 34	16 26	2 4	23 7	2 58	0 54	29 3	6 41	
C	28 20 43	0 29	3 9	23 14	3 8	1 36	1 17	8 17	
20	29 21 52	14 24	4 1	23 20	3 18	2 18	2 31	9 53	
21	♂ 0 23 1	28 10	4 40	23 27	3 28	3 0	3 45	11 29	
22	1 24 10	11 45	5 2	23 34	3 38	3 42	4 58	13 4	
23	2 25 19	25 10	5 7	23 40	3 49	4 24	6 12	14 40	
24	3 26 29	8 22	4 55	23 47	3 59	5 6	7 26	16 15	
25	4 27 38	21 22	4 29	23 54	4 9	5 48	8 39	17 49	
C	5 28 48	4 28	3 49	24 1	4 20	6 30	9 53	19 24	
27	6 29 57	16 40	2 58	24 8	4 31	7 12	11 6	20 58	
28	7 31 7	28 58	2 0	24 14	4 42	7 54	12 19	22 32	
29	8 32 17	11 50	0 58	24 21	4 53	8 36	13 32	24 5	
30	9 33 27	23 1	0 8	24 28	5 3	8 18	14 45	25 37	
31	10 34 38	4 51	1 11	24 35	5 14	9 0	15 57	27 7	
Days	☿'s sets	♂'s rises	♀'s sets	♂'s sets	h's declin.	☿'s declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	10 a 38	6 m 0	5 a 50	sets	21 54	12 22	17 15	24 45	22 52
7	10 16	5 57	6 0	4 a 0	21 45	12 5	18 25	24 10	24 29
13	9 54	5 55	6 12	4 8	21 43	11 46	19 29	23 8	25 21
19	9 23	5 52	6 26	4 24	21 37	11 24	20 26	21 43	25 21
25	9 11	5 48	6 43	4 47	21 30	11 1	21 18	19 55	24 24

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	JANUARY				FEBRUARY				MARCH				APRIL				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	8	31	9	0	9	54	10	26	9	26	9	59	10	58	11	26	1
2	9	31	10	3	11	1	11	33	10	30	11	2	11	52			2
3	10	35	11	6			0	3	11	32			0	18	0	40	3
4	11	38			0	33	0	59	0	2	0	27	1	2	1	24	4
5	0	10	0	38	1	24	1	47	0	52	1	13	1	44	2	7	5
6	1	5	1	32	2	10	2	29	1	35	1	56	2	29	2	47	6
7	1	58	2	22	2	49	3	3	2	17	2	35	3	5	3	23	7
8	2	45	3	2	3	17	3	30	2	52	3	7	3	38	3	55	8
9	3	18	3	32	3	43	3	56	3	21	3	35	4	10	4	33	9
10	3	45	3	58	4	8	4	24	3	49	4	4	4	57	5	22	10
11	4	11	4	27	4	40	4	58	4	20	4	39	5	48	6	19	11
12	4	43	4	58	5	15	5	35	4	59	5	22	6	51	7	26	12
13	5	13	5	31	5	56	6	23	5	44	6	15	8	1	8	37	13
14	5	48	6	10	6	50	7	23	6	46	7	21	9	14	9	48	14
15	6	31	6	56	7	56	8	36	7	56	8	37	10	22	10	55	15
16	7	21	7	52	9	16	9	58	9	18	9	56	11	27	11	56	16
17	8	22	8	59	10	40	11	21	10	35	11	12			0	24	17
18	9	36	10	16			0	2	11	49	0	19	0	50	1	16	18
19	10	55	11	37	0	35	1	8			0	48	1	41	2	6	19
20			0	19	1	28	2	8	1	14	1	41	2	28	2	50	20
21	0	54	1	29	2	31	2	54	2	5	2	30	3	8	3	26	21
22	2	1	2	33	3	11	3	27	2	48	3	7	3	43	4		22
23	2	55	3	16	3	42	3	56	3	23	3	40	4	19	4	38	23
24	3	33	3	50	4	14	4	31	3	55	4	11	5		5	21	24
25	4	7	4	23	4	45	5	8	4	31	4	51	5	45	6	9	25
26	4	41	4	59	5	30	5	51	5	12	5	34	6	3	7		26
27	5	18	5	36	6	18	6	45	6	0	6	27	7	27	7	53	27
28	6	0	6	23	7	19	7	44	6	55	7	24	8	21	8	49	28
29	6	48	7	13	8	18	8	52	7	56	8	28	9	17	9	44	29
30	7	43	8	12					8	59	9	31	10	12	10	39	30
31	8	46	9	19					10	1	10	30					31

This Table may serve the following Places, by adding

	h	m
For Tinmouth Haven, Hartle-pool, and Amsterdam	0	30
Brest — — — — —	1	0
Scilly — — — — —	1	45
Mount's Bay — — — — —	1	55
Bridlington Pier and Humber — — — — —	2	0

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	MAY				JUNE				JULY				AUGUST				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	11	6	11	32			0	9	0	10	0	45	2	9	2	34	1
2	11	58			0	38	1	8	1	20	1	53	2	59	3	12	2
3	0	24	0	48	1	39	2	9	2	25	2	49	3	24	3	45	3
4	1	13	1	39	2	39	3	2	3	14	3	32	4	6	4	24	4
5	2	4	2	28	3	24	3	44	3	51	4	10	4	43	5	2	5
6	2	52	3	11	4	4	4	27	4	29	4	49	5	21	5	44	6
7	3	30	3	49	4	49	5	11	5	8	5	28	6	6	6	33	7
8	4	9	4	33	5	33	6	3	5	49	6	14	7	0	7	30	8
9	4	58	5	23	6	34	6	45	6	36	7	1	8	1	8	36	9
10	5	48	6	18	7	15	7	43	7	27	7	58	9	11	9	46	10
11	6	47	7	17	8	10	8	40	8	29	9	2	10	21	10	55	11
12	7	48	8	19	9	10	9	42	9	35	10	9	11	29	11	58	12
13	8	50	9	23	10	14	10	46	10	43	11	17			0	27	13
14	9	56	10	25	11	17	11	48	11	51			0	53	1	19	14
15	10	54	11	24			0	19	0	21	0	51	1	42	2	4	15
16	11	53			0	47	1	15	1	18	1	44	2	23	2	42	16
17	0	21	0	48	1	43	2	10	2	8	2	33	2	57	3	11	17
18	1	14	1	40	2	32	2	55	2	50	3	7	3	24	3	37	18
19	2	6	2	33	3	12	3	29	3	21	3	36	3	49	4	1	19
20	2	53	3	12	3	44	3	59	3	48	4	1	4	16	4	31	20
21	3	30	3	47	4	15	4	31	4	15	4	30	4	48	5	5	21
22	4	5	4	22	4	48	5	5	4	45	5	0	5	25	5	45	22
23	5	42	5	1	5	21	5	37	5	16	5	32	6	11	6	38	23
24	5	20	5	39	5	56	6	16	5	52	6	12	7	16	7	42	24
25	6	1	6	23	6	37	6	58	6	36	7	1	8	21	9	0	25
26	6	45	7	7	7	21	7	45	7	30	7	59	9	42	10	24	26
27	7	31	7	56	8	13	8	41	8	34	9	10	11	4	11	44	27
28	8	21	8	47	9	14	9	48	9	51	10	32			0	18	28
29	9	15	9	42	10	21	10	55	11	12	11	53	0	52	1	21	29
30	10	10	10	38	11	33			0	28			1	50	2	15	30
31	11	8	11	39					1	4	1	37	2	41	2	59	31

Adding

h m

For Fowey, Loo and Plymouth	—	—	—	—	3	10
Dartmouth, Harborough and Hull	—	—	—	—	3	30
Torbay and Tinmouth	—	—	—	—	3	40
Exmouth, Topsham and Lime	—	—	—	—	3	50
Weymouth	—	—	—	—	4	20
Bridgewater and Texel	—	—	—	—	4	40
Portland and Hartflew	—	—	—	—	5	50

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	3	17	3	33	3	36	3	53	4	40	5	0	4	56	5	14	1
2	3	50	4	17	4	10	4	30	5	21	5	45	5	32	5	52	2
3	4	44	4	54	4	51	5	14	6	10	6	35	6	13	6	34	3
4	5	5	5	27	5	37	6	5	7	1	7	26	6	55	7	18	4
5	5	48	6	16	6	33	7	1	7	52	8	20	7	40	8	5	5
6	6	45	7	15	7	30	8	0	8	47	9	14	8	31	8	57	6
7	7	46	8	20	8	31	9	3	9	41	10	7	9	23	9	51	7
8	8	54	9	28	9	35	10	3	10	33	10	59	10	20	10	50	8
9	10	5	10	34	10	32	10	58	11	26	11	50	11	19	11	50	9
10	11	5	11	34	11	25	11	49			0	15			0	21	10
11			0	3			0	14	0	39	1	3	0	51	1	20	11
12	0	26	0	49	0	36	0	58	1	28	1	53	1	50	2	20	12
13	1	11	1	32	1	19	1	40	2	18	2	43	2	44	3	9	13
14	1	53	2	14	2	2	2	24	3	23	3	23	3	29	3	48	14
15	2	32	2	49	2	42	3	0	3	41	4	0	4	8	4	27	15
16	3	3	3	17	3	16	3	33	4	22	4	44	4	47	5	8	16
17	3	31	3	45	3	49	4	6	5	7	5	30	5	30	5	52	17
18	4	0	4	14	4	28	4	51	5	57	6	24	6	17	6	42	18
19	4	34	4	54	5	14	5	38	6	51	7	19	7	7	7	33	19
20	5	16	5	38	6	7	6	36	7	50	8	21	8	3	8	33	20
21	6	8	6	37	7	8	7	40	8	54	9	26	9	4	9	36	21
22	7	10	7	43	8	15	8	50	9	57	10	28	10	9	10	42	22
23	8	21	9	0	9	26	10	2	10	59	11	30	11	17	11	52	23
24	9	39	10	19	10	34	11	6			0	0			0	23	24
25	10	55	11	31	11	37			0	30	0	58	0	55	1	23	25
26			0	3	0	8	0	35	1	26	1	54	1	51	2	16	26
27	0	34	1	1	1	2	1	28	2	22	2	44	2	42	3	0	27
28	1	29	1	55	1	54	2	20	3	6	3	24	3	18	3	33	28
29	2	21	2	41	2	46	3	4	3	43	4	0	3	49	4	3	29
30	3	1	3	19	3	23	3	41	4	17	4	37	4	17	4	33	30
31					3	58	4	19					4	49	5	6	31

Subtracting

h m

For Leigh, Maes, and Gouries Gut	—	—	—	—	0	5
Gravesend, Rochester, and Rammekins	—	—	—	—	1	20
Buoy of the Nore and Flushing	—	—	—	—	1	30
Portsmouth, Ostend, Shoe-Beacon, and Red-Sand	—	—	—	—	2	0
Harwich, Dover, Spithead, and Calais	—	—	—	—	3	0
Gunfleet, Hastings, Shoreham, Orfordness, and Diep	—	—	—	—	4	0
Yarmouth Pier and Needle	—	—	—	—	4	40
St. Helen's and Havre-de-Grace	—	—	—	—	5	30

IN the course of this year there will happen 4 eclipses, viz. 2 of the Sun, and 2 of the Moon; but only one of the Moon will be visible to us. They are as follow:

I. The first is an invisible eclipse of the Sun, on the 20th day of February, near half past eight o'clock at night: The Sun will be centrally eclipsed on the meridian in 119° west longitude, and 60° south latitude.

II. The second will be a visible eclipse of the Moon, on Sunday the 7th day of March; the time of which, see the following computation:

	LONDON			YORK			EDINB.			
	h	m	s	h	m	s	h	m	s	
Beg. of the eclipse	2	16	8	2	12	3	2	3	17	March 7th
Middle	3	27	38	3	23	33	3	14	47	morning,
End of the eclipse	4	39	8	4	35	3	4	26	17	apparent
Digits eclipsed	4 ^o	36'		4 ^o	36'		4 ^o	36'		time.

III. The third will be an eclipse of the Sun, on the 15th day of August, near midnight, consequently invisible to us: The Sun will be centrally eclipsed on the meridian in longitude 177° west, and 63° north latitude.

IV. The fourth and last eclipse will be an invisible one of the Moon, on Monday the 30th day of August, near three quarters of an hour past 2 o'clock in the afternoon: This eclipse will be visible in New-Holland, and throughout Asia; &c. &c.

Speculum Phænomenorum

JANUARY		FEBRUARY		MARCH	
1	♀ elong. max. a ☉	1	♂ stationary	2	☾ in apogeo.
5	♂ ☉ ♀ 4h.	3	♂ ☉ ♀ 10h.	4	♂ in ☿
7	☾ in apogeo	4	☾ in apogeo	6	☾ eclips. visible
15	♂ ♀ ☾ 15h.	10	♂ ☉ ♀ 6h.	7	♂ elong. max. a ☉.
19	☉ in ☿ 19h. 36m.	17	♂ ♀ ☾ 8h.	10	♀ in ☿
20	♂ ♀ ☾ 22h.	17	♂ ♀ ☾ 13h.	16	☾ in perigeo
21	☾ in perigeo	18	☾ in perigeo	16	♂ ♀ ☾ 1h.
22	♂ ♀ ☾ 13h.	18	☉ in ♄ 10h. 24m.	18	♂ ♀ ☾ 3h.
23	♂ ♀ ☾ 5h.	19	♂ ♀ ☾ 3h.	18	♂ ♀ ☾ 7h.
26	♂ elong. max. a ☉	19	♂ ♀ ☾ 11h.	18	♂ ♀ ☾ 23h.
28	♂ ☉ ☾ 12h.	20	☉ eclips. invisible	19	☉ in ♀ 10h. 46m.
30	♂ in perihelio	23	♂ stationary	25	♂ ☉ ☾ 20h.
		26	♂ ☉ ☾ 3h.	30	☾ in apogeo
APRIL		MAY		JUNE	
12	♂ ♀ ☾ 10h.	3	♂ stationary	1	♂ stationary
12	☉ ☉ ♀ 14h.	9	♂ ♀ ☾ 16h.	5	♂ ♀ ☾ 21h.
13	☾ in perigeo	10	☾ in perigeo	7	☾ in perigeo
13	♀ in aphelio	12	♂ ♀ ☾ 13h.	8	♂ ♀ ☾ 23h.
15	♂ ♀ ☾ oh.	16	♂ ♀ ☾ 22h.	10	♂ in aphelio
17	♂ ♀ ☾ oh.	18	♂ elong. max. a ☉	12	♂ ☉ ♀ 22h.
18	☉ in ☿ 23h. 30m.	20	☉ in ♀ oh. 5m.	16	♂ ♀ ☾ oh.
19	♂ ♀ ☾ 5h.	20	♂ ♀ ☾ 15h.	16	♂ ♀ ☾ 18h.
22	♂ in ☿	22	♂ ☉ ☾ 10h.	19	♂ ☉ ☾ 5h.
23	♂ ☉ ☾ 15h.	24	☾ in apogeo	20	☉ in ☿ 8h. 49m.
27	☾ in apogeo			21	☾ in apogeo
28	♂ in perihelio				

ad Annum 1784.

JULY	AUGUST	SEPTEMBER
1 ♀ in ☿ 3 ♂ ♀ ☿ 4h. 6 ☿ elong. max. a ☉ 6 ♂ ♀ ☿ 7h. 12 ♂ ☿ ♀ 4h. 15 ♂ ☿ ☿ 6h. 16 ♂ ♀ ☿ 7h. 18 ☿ in apogeo 19 ♂ ☿ ☿ oh. 21 ☉ in ♄ 19h. 40m. 22 ☿ in ☿ 24 ☿ in perihelio. 30 ♂ ♀ ☿ 11h.	1 ☿ in perigeo 2 ♂ ☿ ☿ 4h. 3 ♂ ♀ ☿ 13h. 4 ♀ in perihelio 8 ♂ ☿ ♀ 9h. 15 ☿ in apogeo 15 ♂ ♀ ☿ 17h. 15 ☉ eclips. invisible 16 ♂ ☿ ☿ 19h. 16 ♂ ☿ ☿ 20h. 22 ☉ in ♀ 2h. 2m. 26 ♂ ♀ ☿ 19h. 29 ♂ ♀ ☿ 19h. 29 ☿ in perigeo 30 ☿ eclips. invisible	6 ☿ in aphelio 11 ☿ in apogeo 14 ☿ elong. max. a ☉ 14 ♂ ☿ ☿ 15h. 15 ♂ ♀ ☿ 3h. 16 ♂ ☿ ☿ 13h. 21 ☉ in ♄ 21h. 29m. 23 ♂ ♀ ☿ 3h. 25 ☿ in perigeo 26 ♂ ♀ ☿ oh. 28 ☿ stationary 28 ♂ ☿ ☿
OCTOBER	NOVEMBER.	DECEMBER.
7 ☿ elong. max. a ☉ 9 ☿ in apogeo 9 ☉ ☿ ♀ 23h. 10 ♂ ☿ ☿ 8h. 13 ♂ ☿ ☿ 7h. 13 ♂ ☿ ☿ 10h. 15 ♂ ♀ ☿ 10h. 15 ☿ in ☿ 19 ☿ stationary 20 ♀ in ☿ 20 ☿ in perihelio 20 ♂ ♀ ☿ 10h. 22 ☉ in ♀ 6h. 25m. 22 ♂ ♀ ☿ 6h. 23 ☿ in perigeo 25 ☿ elong. max. a ☉ 27 ♀ stationary	5 ☿ in apogeo 11 ♂ ☿ ☿ 7h. 11 ♂ ☿ ☿ 13h. 14 ♂ ♀ ☿ 12h. 16 ♂ ♀ ☿ 19h. 17 ☿ in perigeo 19 ♂ ♀ ☿ 14h. 20 ☉ ☿ ♀ 13h. 21 ☉ in ♀ 2h. 36m. 23 ☿ in ☿ 24 ♀ in aphelio	1 ♂ ☿ ☿ 8h. 3 ☿ in apogeo 3 ☿ in aphelio 10 ♂ ☿ ☿ 4h. 12 ♂ ☿ ☿ 12h. 14 ♂ ♀ ☿ 6h. 14 ♂ ♀ ☿ 11h. 17 ♂ ♀ ☿ 1h. 17 ☿ in perigeo 20 ☉ in ♀ 14h. 58m.

The Eclipses of Jupiter's

JANUARY	FEBRUARY	MARCH	APRIL
The Eclipses of Jupiter's Satellites will not be visible this month, Jupiter being too near the Sun.	The Eclipses of Jupiter's Satellites will not be visible this month, Jupiter being too near the Sun.	Immersion	Immersion
		8 18 23 6	2 13 9 4
		10 12 52 6	4 7 38 4
		12 7 21 6	6 2 6 59
		14 1 50 7	7 20 35 56
		15 20 19 8	9 15 4 51
		17 14 48 8	11 9 33 43
		19 9 17 9	13 4 2 36
		21 3 46 9	14 22 31 27
		22 22 15 10	16 17 0 18
		24 16 44 11	18 11 29 7
		26 11 13 12	20 5 57 53
		28 5 42 11	22 0 26 38
		30 0 11 10	23 18 55 22
		31 18 40 9	25 13 24 4
			27 7 52 45
			29 2 21 24
			30 20 50 0
MAY	JUNE	JULY	AUGUST
Immersion	Immersion	Immersion	Immersion
2 15 18 35	1 17 19 52	1 19 16 35	2 15 47 8
4 9 47 7	3 11 47 55	3 13 44 41	4 10 15 52
6 4 15 33	5 6 15 58	5 8 12 48	6 4 44 38
7 22 44 8	7 0 44 1	7 2 40 57	7 23 13 26
9 17 12 34	8 19 12 5	8 21 9 10	9 17 42 16
11 11 41 1	10 13 40 8	10 15 37 18	11 12 11 7
13 6 9 25	12 8 8 9	12 10 5 29	13 6 40 1
15 0 37 46	14 2 36 11	14 4 33 47	15 1 8 57
16 19 6 5	15 21 4 11	15 23 2 4	16 19 37 57
18 13 34 23	17 15 32 12	17 17 30 25	18 14 6 59
20 8 2 39	19 10 0 13	19 11 58 47	20 8 36 3
22 2 30 53	21 4 28 14	21 6 27 12	22 3 5 8
23 20 59 6	22 22 56 15	23 0 55 36	23 21 34 18
25 15 27 17	24 17 24 16	24 19 24 7	Emergence
27 9 55 27	26 11 52 20	26 13 52 37	25 18 18 8
29 4 23 38	28 6 20 25	28 8 21 14	27 12 47 21
30 22 51 43	30 0 48 28	30 2 49 48	29 7 16 33
		31 21 18 28	31 1 45 50

first Satellite for 1784.

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Emerfions	Emerfions	Emerfions	Emerfions
1 20 15 2	1 22 34 27	1 0 51 26	1 2 58 9
3 14 44 17	3 17 3 51	2 19 20 23	2 21 26 26
5 9 13 36	5 11 33 15	4 13 49 18	4 15 54 41
7 3 42 56	7 6 2 38	6 8 18 11	6 10 22 55
8 22 12 16	9 0 32 1	8 2 47 1	8 4 51 8
10 16 41 38	10 19 1 23	9 21 15 48	9 23 19 18
12 11 11 0	12 13 30 43	11 15 44 33	11 17 47 28
14 5 40 23	14 8 0 1	13 10 13 16	13 12 15 36
16 0 9 47	16 2 29 17	15 4 41 56	15 6 43 44
17 18 39 10	17 20 58 32	16 23 10 33	17 1 11 50
19 13 8 34	19 15 27 46	18 17 39 7	18 19 39 57
21 7 37 58	21 9 56 57	20 12 7 40	20 14 8 3
23 2 7 24	23 4 26 8	22 6 36 10	22 8 36 9
24 20 36 50	24 22 55 15	24 1 4 39	24 3 4 14
26 15 6 15	26 17 24 21	25 19 33 5	25 21 32 18
28 9 35 39	28 11 53 25	27 14 1 27	27 16 0 25
30 4 5 2	30 6 22 27	29 8 29 48	29 10 28 31
			31 4 56 38

The Times of the Eclipses contained in this Table, are adapted to the Meridian of the Royal Observatory at Greenwich, and afford an excellent Method to discover the Longitude or Difference of Meridians, between that and any other Place; which I shall illustrate by an EXAMPLE:

Suppose on the 8th Day of November of this Year, the Time of the Emerfion of Jupiter's first Satellite be observed (by a Telescope) in an unknown Meridian, to happen at 4 h. 35 min. 21 sec. at night; I find by the Table, that the Time of this Emerfion will happen at the British Observatory, at 2 h. 47 min. 1 sec. the same day; The Difference of the Times is 1 hour 48 min. 20 sec. which being converted into Degrees and Minutes of the Equator, will make 27 deg. 5 min. the Longitude of the Place of Observation, to the East, because the Time is more than that at the British Observatory.

A Table of the Sun's semi-diurnal Arches, or Times

The Sun's Declination North.

Degr.	Lat. 49		Lat. 50		Lat. 51		Lat. 52		Lat. 53		Lat. 54	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	8	6	8	6	8	6	9	6	9	6	9
2	6	12	6	13	6	13	6	14	6	14	6	15
3	6	17	6	18	6	18	6	19	6	19	6	20
4	6	22	6	22	6	22	6	24	6	25	6	25
5	6	26	6	27	6	27	6	29	6	30	6	31
6	6	31	6	32	6	33	6	34	6	36	6	37
7	6	36	6	37	6	38	6	40	6	41	6	43
8	6	41	6	42	6	43	6	45	6	47	6	48
9	6	45	6	47	6	48	6	50	6	52	6	54
10	6	50	6	52	6	54	6	56	6	58	7	0
11	6	55	6	57	6	59	7	1	7	3	7	6
12	7	0	7	2	7	4	7	7	7	9	7	12
13	7	5	7	7	7	10	7	12	7	15	7	18
14	7	10	7	13	7	15	7	18	7	21	7	24
15	7	15	7	18	7	21	7	24	7	27	7	31
16	7	21	7	24	7	27	7	30	7	33	7	37
17	7	26	7	29	7	33	7	36	7	40	7	44
18	7	31	7	35	7	38	7	42	7	46	7	51
19	7	37	7	41	7	45	7	49	7	53	7	58
20	7	43	7	47	7	51	7	55	8	0	8	5
21	7	49	7	53	7	57	8	2	8	7	8	12
22	7	55	7	59	8	4	8	9	8	14	8	20
23	8	1	8	6	8	11	8	16	8	22	8	28
24	8	7	8	12	8	18	8	24	8	30	8	36

By these Tables the Times of the Sun's Rising and Setting may be found, in any Part of the Kingdom of *Great-Britain* or *Ireland*, after the following Manner: Where the Latitude of the Place is known, take the Sun's Declination out of the Table, on the Noon of the Day you desire to know the Time of his Rising and Setting; and with it, according as it is either North or South, enter these Tables in the Left-

of his visible half Duration above the Horizon.

The Sun's Declination South.

Degr.	Lat. 49		Lat. 50		Lat. 51		Lat. 52		Lat. 53		Lat. 54	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	5	59	5	59	5	58	5	58	5	58	5	58
2	5	54	5	54	5	53	5	53	5	53	5	53
3	5	49	5	49	5	49	5	48	5	48	5	47
4	5	45	5	44	5	44	5	43	5	42	5	42
5	5	40	5	39	5	39	5	38	5	37	5	36
6	5	35	5	35	5	34	5	33	5	31	5	30
7	5	31	5	30	5	29	5	27	5	26	5	25
8	5	26	5	25	5	23	5	22	5	21	5	19
9	5	21	5	20	5	18	5	17	5	16	5	13
10	5	17	5	15	5	13	5	11	5	10	5	8
11	5	12	5	10	5	8	5	6	5	4	5	2
12	5	7	5	5	5	3	5	0	4	58	4	56
13	5	2	5	0	4	57	4	55	4	52	4	50
14	4	57	4	54	4	52	4	49	4	47	4	44
15	4	52	4	49	4	46	4	44	4	41	4	37
16	4	46	4	45	4	41	4	38	4	34	4	31
17	4	41	4	38	4	35	4	32	4	28	4	23
18	4	36	4	33	4	29	4	26	4	22	4	18
19	4	30	4	27	4	23	4	19	4	15	4	11
20	4	25	4	21	4	17	4	13	4	9	4	4
21	4	19	4	15	4	11	4	6	4	2	3	57
22	4	13	4	9	4	4	4	0	3	55	3	50
23	4	7	4	2	3	58	3	53	3	47	3	42
24	4	1	3	56	3	51	3	46	3	40	3	34

Left-hand Column, under the Word Degrees; then look the Latitude of the Place in the Top of the Table; and in that Column, against the Sun's Declination, will be found the Time of his visible half Duration above the Horizon, or Time of his Setting, correct by Refraction; then subtract the Time of his Setting from 12 Hours, the Remainder will be the Time of his Rising; double the Time of his Setting, the

A Table of the Sun's semi-diurnal Arches, or Times

The Sun's Declination North.

Degr.	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	9	6	10	6	10	6	10	6	11	6	11
2	6	15	6	16	6	16	6	17	6	17	6	18
3	6	21	6	22	6	22	6	23	6	24	6	25
4	6	27	6	28	6	29	6	30	6	31	6	32
5	6	32	6	34	6	35	6	36	6	38	6	39
6	6	38	6	40	6	41	6	43	6	44	6	46
7	6	44	6	46	6	48	6	49	6	51	6	53
8	6	50	6	52	6	54	6	56	6	58	7	1
9	6	56	6	58	7	1	7	3	7	5	7	8
10	7	2	7	5	7	7	7	10	7	13	7	16
11	7	8	7	10	7	14	7	17	7	20	7	23
12	7	15	7	18	7	21	7	34	7	27	7	31
13	7	21	7	24	7	28	7	31	7	35	7	39
14	7	28	7	31	7	35	7	39	7	43	7	47
15	7	34	7	39	7	42	7	46	7	51	7	56
16	7	41	7	45	7	49	7	54	7	59	8	4
17	7	48	7	52	7	57	8	1	8	7	8	13
18	7	55	8	0	8	5	8	10	8	16	8	22
19	8	2	8	7	8	13	8	19	8	25	8	32
20	8	10	8	15	8	21	8	28	8	35	8	42
21	8	18	8	24	8	30	8	37	8	45	8	53
22	8	26	8	32	8	39	8	47	8	55	9	4
23	8	34	8	41	8	49	8	57	9	6	9	16
24	8	43	8	51	8	59	9	8	9	18	9	29

the Sum will be the Length of the Day; and double the Time of his Rising, the Sum will be the Length of the Night. But if the Latitude of the Place, and Declination of the Sun, consist of Degrees and Minutes, then a small Allowance must be made for the Minutes in both Cases, which may be done by a Person of an ordinary Capacity by a mental Proportion only. Thus, to find the Time of the Sun's Rising and Setting at

of his visible half Duration above the Horizon.

The Sun's Declination South.

Degr.	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	5	58	5	58	5	58	5	58	5	57	5	57
2	5	52	5	52	5	52	5	51	5	51	5	50
3	5	47	5	46	5	45	5	45	5	44	5	43
4	5	41	5	40	5	39	5	38	5	37	5	36
5	5	35	5	34	5	33	5	32	5	31	5	29
6	5	29	5	28	5	27	5	25	5	24	5	24
7	5	23	5	22	5	20	5	19	5	17	5	15
8	5	17	5	16	5	14	5	12	5	10	5	8
9	5	12	5	10	5	8	5	5	5	3	5	2
10	5	5	5	3	5	1	4	59	4	56	4	53
11	4	59	4	57	4	54	4	52	4	49	4	46
12	4	53	4	51	4	48	4	45	4	42	4	38
13	4	47	4	44	4	41	4	38	4	34	4	30
14	4	41	4	37	4	34	4	30	4	27	4	23
15	4	34	4	31	4	27	4	23	4	19	4	14
16	4	27	4	24	4	20	4	15	4	11	4	6
17	4	21	4	17	4	12	4	8	4	3	3	57
18	4	14	4	9	4	5	4	0	3	54	3	48
19	4	7	4	2	3	56	3	51	3	45	3	39
20	3	59	3	54	3	49	3	43	3	36	3	29
21	3	52	3	46	3	40	3	34	3	27	3	19
22	3	44	3	38	3	31	3	24	3	17	3	9
23	3	36	3	29	3	23	3	15	3	0	2	57
24	3	27	3	20	3	13	3	5	2	55	2	45

at Aberdeen in Scotland, on the Longest Day; the Latitude of that Place is accounted 57 Degr. 7 Min. North, and the Sun's Declination 23 Deg. 28 Min. likewise North. By these you will find by the Table, that 5 Min. for the Sun's Declination, and 1 Min. for the Latitude of the Place, are both, to be added to 8 Hours 49 Min. the Time belonging to 57 Degr. of Latitude and 23 Degr. of North Declination, and the Sum will be 8 Hours 55 Min. the Time of his apparent Setting at Aberdeen, on the longest Day, whose Complement to 12 Hours, viz. 3 Hours 5 Min. will be the Time of his Rising, &c.

A Table of the Sun's Right-Ascension in Time, the greatest

Degr.	♈			♉			♊			♋			♌			♍		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	0	0	0	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23
1	0	3	40	1	55	27	3	55	25	6	4	22	8	12	54	10	12	12
2	0	7	20	1	59	17	3	59	36	6	8	43	8	17	3	10	16	0
3	0	11	0	2	3	8	4	3	48	6	13	5	8	21	11	10	19	48
4	0	14	41	2	6	59	4	8	0	6	17	26	8	25	19	10	23	35
5	0	18	21	2	10	51	4	12	13	6	21	48	8	29	26	10	27	22
6	0	22	2	2	14	44	4	16	26	6	26	9	8	33	31	10	31	8
7	0	25	42	2	18	37	4	20	40	6	30	30	8	37	37	10	34	54
8	0	29	23	2	22	31	4	24	55	6	34	51	8	41	41	10	38	40
9	0	33	4	2	26	25	4	29	10	6	39	11	8	45	45	10	42	25
10	0	36	45	2	30	20	4	33	26	6	43	31	8	49	48	10	46	9
11	0	40	26	2	34	16	4	37	42	6	47	51	8	53	51	10	49	53
12	0	44	8	2	38	13	4	41	59	6	52	11	8	57	52	10	53	37
13	0	47	50	2	42	10	4	46	16	6	56	31	9	1	53	10	57	20
14	0	51	32	2	46	8	4	50	34	7	0	50	9	5	53	11	1	3
15	0	55	14	2	50	7	4	54	52	7	5	8	9	9	53	11	4	46
16	0	58	5	2	54	7	4	59	10	7	9	26	9	13	52	11	8	28
17	1	2	40	2	58	7	5	3	29	7	13	44	9	17	50	11	12	10
18	1	6	23	3	2	8	5	7	49	7	18	1	9	21	47	11	15	52
19	1	10	7	3	6	9	5	12	9	7	22	18	9	25	44	11	19	34
20	1	13	51	3	10	12	5	16	29	7	26	34	9	29	40	11	23	15
21	1	17	35	3	14	15	5	20	49	7	30	50	9	33	35	11	26	56
22	1	21	20	3	18	19	5	25	9	7	35	5	9	37	29	11	30	37
23	1	25	6	3	22	23	5	29	30	7	39	20	9	41	23	11	34	18
24	1	28	52	3	26	29	5	33	51	7	43	34	9	45	16	11	37	58
25	1	32	38	3	30	35	5	38	12	7	47	47	9	49	9	11	41	39
26	1	36	25	3	34	41	5	42	34	7	52	0	9	53	1	11	45	19
27	1	40	12	3	38	49	5	46	55	7	56	12	9	56	52	11	49	0
28	1	44	0	3	42	57	5	51	17	8	0	24	10	0	43	11	52	40
29	1	47	48	3	47	6	5	55	38	8	4	35	10	4	33	11	56	20
30	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23	12	0	0

The time of the southing or meridian transits of the fixed stars in pa. 46, may be found thus. On the noon of the day, preceding the night in which you want to know the time of the southing of any of those stars, find the Sun's place in the Ephemeris, and with it take out of the above table his right ascension in time; this you may do by inspection to a minute, which will be sufficient for your present purpose: Then from the right ascension of the star in pa. 46, subtract the right ascension of the Sun, the remainder will be the estimate time of the star's southing; and will not differ from the true time above 2 or 3 minutes at most, which may be near enough for ordinary uses. But when great exactness is required, reduce the Sun's place to this estimate time, and with it find in the above table his right ascension to seconds; which being subtracted from that of the star, the remainder will be the

Obliquity of the Ecliptic being $23^{\circ} 28'$.

Degr.	α			η			$\uparrow$			ν			$\sim$			$\times$		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	12	0	0	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23
1	12	3	40	13	55	27	15	55	25	18	4	22	20	12	54	22	12	12
2	12	7	20	13	59	17	15	59	36	18	8	43	20	17	3	22	16	0
3	12	11	0	14	3	8	16	3	48	18	13	5	20	21	11	22	19	48
4	12	14	41	14	6	59	16	7	0	18	17	26	20	25	19	22	23	35
5	12	18	21	14	10	51	16	12	13	18	21	48	20	29	26	22	27	22
6	12	22	2	14	14	44	16	16	26	18	26	9	20	33	31	22	31	8
7	12	25	42	14	18	37	16	20	40	18	30	30	20	37	37	22	34	54
8	12	29	23	14	22	31	16	24	55	18	34	51	20	41	41	22	38	40
9	12	33	4	14	26	25	16	29	10	18	39	11	20	45	45	22	42	25
10	12	36	45	14	30	20	16	33	26	18	43	31	20	49	48	22	46	9
11	12	40	26	14	34	16	16	37	42	18	47	51	20	53	51	22	49	53
12	12	44	8	14	38	13	16	41	59	18	52	11	20	57	52	22	53	37
13	12	47	50	14	42	10	16	46	16	18	56	31	21	1	53	22	57	20
14	12	51	32	14	46	8	16	50	34	19	0	50	21	5	53	23	1	3
15	12	55	14	14	50	7	16	54	52	19	5	8	21	9	53	23	4	46
16	12	58	57	14	54	7	16	59	10	19	9	26	21	13	52	23	8	28
17	13	2	40	14	58	7	17	3	29	19	13	44	21	17	50	23	12	10
18	13	6	23	15	2	8	17	7	49	19	18	1	21	21	47	23	15	52
19	13	10	7	15	6	9	17	12	9	19	22	18	21	25	44	23	19	34
20	13	13	51	15	10	12	17	16	29	19	26	34	21	29	40	23	23	15
21	13	17	35	15	14	25	17	20	49	19	30	50	21	33	35	23	26	56
22	13	21	20	15	18	19	17	25	9	19	35	5	21	37	29	23	30	37
23	13	25	6	15	22	23	17	29	30	19	39	20	21	41	23	23	34	18
24	13	28	52	15	26	29	17	33	51	19	43	34	21	45	16	23	37	58
25	13	32	38	15	30	35	17	38	12	19	47	47	21	49	9	23	41	39
26	13	36	25	15	34	41	17	42	34	19	52	0	21	53	1	23	45	19
27	13	40	12	15	38	49	17	46	55	19	56	12	21	56	52	23	49	0
28	13	44	0	15	42	57	17	51	17	20	0	24	22	0	43	23	52	40
29	13	47	48	15	47	6	17	55	38	20	4	35	22	4	33	23	56	20
30	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23	24	0	0

the true time of the star's culminating or southing. And if from the time of the star's southing you subtract the semidiurnal arc belonging to it, the remainder will be the time of the star's rising; and being added to it, the sum will be the time of its setting.

Annexed is an Ex. of SIRIUS for Jan. 31, 1784.

☉'s place at noon $\sim 11^{\circ} 22'$	h	m	s
Rt. Asc. of Sirius - -	6	35	33
☉'s rt. asc. subtract - -	20	55	20
*'s estimate southing - -	9	40	13
☉'s rt. asc. at that time sub.	20	56	31
*'s true southing - -	9	39	2
Semid. arc sub. & add - -	4	36	55
*'s rising aftern. - -	5	2	7
*'s setting - -	14	15	57

A Table of the mean Right-Ascensions in time, Semidurnal-Arcs, Declinations, and Magnitudes of 40 remarkable fixed Stars, with their Names, and Bayer's Literal Characters, for January 1, 1782.

Names of the Stars	Ch.	Rt. Asc.			Declination			Semid. Ar.			Ma
		h	m	s	°	'	"	h	m	s	
Pole star, Alruccabah -	α	0	48	3	88	8	36 n	fets not			2
Andromeda's girdle, Mirach -	β	0	57	36	34	27	35 n	10	7	32	2
Andromeda's left foot, Almach	γ	1	50	36	41	16	30 n	fets not			2
Kam's following horn -	α	1	54	56	22	25	27 n	8	9	35	2
Whale's jaw, Menkar -	α	2	50	54	3	13	26 n	6	19	48	2
Medusa's head, Algol -	β	2	54	4	40	6	6 n	fets not			2
Perseus's right side, Algenib	α	3	8	51	49	4	11 n	fets not			2
Brightest of the 7 stars -	η	3	34	34	23	25	2 n	8	16	40	3
Bull's south eye, Aldebaran	α	4	23	26	16	3	23 n	7	28	51	1
Auriga's left shoulder, Capella	α	5	0	37	45	44	59 n	fets not			1
Orion's left foot, Rigel -	β	5	4	4	8	28	3 s	5	20	28	1
Bull's north horn -	β	5	12	32	28	24	22 n	8	57	1	2
Orion's left shoulder, Bellatrix	γ	5	13	27	6	8	10 n	6	34	41	2
Orion's girdle -	ϵ	5	25	10	1	21	24 s	5	56	42	2
Orion's right shoulder, Betelgeuse	α	5	43	23	7	29	59 n	6	40	58	1
In the great Dog's mouth, Sirius	α	6	35	33	16	25	14 s	4	36	55	1
Head of the 1st Twin, Castor	α	7	20	41	32	20	54 n	9	38	21	1
In the left Dog's thigh, Procyon	α	7	27	54	5	46	41 n	6	32	50	1
Head of the 2d Twin, Pollux	β	7	31	59	28	32	14 n	8	58	13	2
Hydra's heart, Alphard -	α	9	16	53	7	43	21 s	5	24	20	2
Lion's heart, Regulus -	α	9	56	45	13	1	32 n	7	11	28	1
Great Bear, Lower Pointer	β	10	48	34	57	32	47 n	fets not			2
Great Bear, Upper Pointer -	α	10	50	8	62	55	27 n	fets not			2
Lion's tail, Deneb -	β	11	37	56	15	47	28 n	7	27	18	2
Great Bear, 1st in the tail, Aliath	ϵ	12	44	22	57	8	46 n	fets not			2
Virgius's spike -	α	13	13	44	10	1	2 s	5	12	20	1
Dragon's tail -	α	13	58	30	65	25	19 n	fets not			2
Bootes, Arcturus -	α	14	5	46	20	20	5 n	7	55	26	1
Libra, Southern Scale -	α	14	38	52	15	7	26 s	4	44	23	2
Libra, Northern Scale -	β	15	5	18	8	33	59 s	5	19	57	2
Bright star in the North Crown	α	15	25	28	27	27	35 n	8	48	36	2
Scorpion's heart, Antares	α	16	16	4	25	55	50 s	3	34	6	1
Hercules's head, Raf. Algethi	α	17	4	43	14	39	8 n	7	20	41	2
Head of Serpentarius -	α	17	24	49	12	44	2 n	7	9	50	2
Dragon's head, Rastaben -	γ	17	51	34	51	31	19 n	fets not			2
Bright star in the Harp, Lyra	α	18	29	33	38	35	19 n	fets not			1
Bright star in the Eagle, Atair	α	19	40	8	8	18	10 n	6	45	57	2
Mouth of South Fish, Fomalhaut	α	22	45	34	30	46	17 s	2	52	6	1
Pegasus's wing, Markab -	α	22	53	55	14	2	8 n	7	17	10	2
Andromeda's head -	α	23	57	9	27	53	2 n	8	52	19	2

A Table of the Longitudes, Latitudes, and Magnitudes of the most remarkable fixed Stars that the Moon can Eclipse, or make a near Appulse unto; exactly rectified to the beginning of the year 1780.

Con.	Ch.	Long.	Lat.	Mag.	Con.	Ch.	Long.	Lat.	Mag.
♈	♏	11 4 48	2 9 44 n	4	♈	♏	12 1 6	0 21 48 n	2
	♏	14 28 2	1 5 37 n	4		♏	17 56 14	1 49 14 s	3
	♏	16 48 2	0 12 11 s	4		♏	22 3 46	4 24 41 n	3
♏	♏	17 46 21	1 48 7 n	4		♏	24 18 10	4 2 52 n	4
	♏	26 55 21	4 1 36 n	3		♏	24 41 24	0 1 1 n	4
	♏	2 43 37	5 45 30 s	3		♏	26 47 46	3 29 24 n	4
	♏	5 23 14	2 35 37 s	3		♏	27 24 23	0 6 53 n	4
	♏	6 42 57	5 29 2 s	1		♏	29 30 5	1 57 17 s	3
	♏	19 30 14	5 21 59 n	2		♏	29 52 12	5 26 15 s	3
	♏	21 42 52	2 13 29 s	3		♏	1 7 10	1 2 18 n	2
♏	♏	0 22 14	0 55 4 s	4		♏	1 34 27	1 39 52 n	4
	♏	2 13 39	0 50 34 s	3		♏	4 43 50	4 0 23 s	4
	♏	5 1 57	6 46 12 s	2		♏	6 41 35	4 32 17 s	1
	♏	6 52 7	2 2 28 n	3		♏	8 23 19	6 5 21 s	4
	♏	15 27 6	0 12 19 s	3		♏	28 11 40	6 56 48 s	3
	♏	20 11 11	6 40 4 n	1		♏	0 8 35	2 22 24 n	4
♏	♏	4 28 28	3 10 22 n	4		♏	3 15 8	2 5 31 s	4
	♏	5 38 46	0 4 13 n	4		♏	7 6 25	3 56 22 s	3
	♏	18 35 0	3 1 57 s	4		♏	9 18 54	3 24 55 s	3
	♏	21 11 15	3 46 1 s	4		♏	11 46 9	5 2 33 s	3
	♏	24 50 0	4 51 9 n	4		♏	11 55 13	0 53 36 n	3
	♏	26 46 26	0 27 27 n	1		♏	13 10 58	1 28 7 n	4
	♏	3 19 2	0 8 29 n	4		♏	0 58 32	4 36 46 n	3
	♏	18 26 24	0 31 21 s	4		♏	17 7 37	4 57 31 s	4
	♏	21 58 9	3 2 51 s	4		♏	18 42 30	2 32 6 s	4
♏	♏	24 2 24	0 41 36 n	3		♏	20 27 42	2 33 40 s	3
	♏	0 17 47	5 4 42 n	3		♏	25 38 54	2 3 47 s	4
	♏	1 45 53	1 22 24 n	3		♏	0 11 19	2 43 22 n	4
	♏	7 6 18	2 48 57 n	3		♏	8 30 20	0 22 57 s	4
	♏	20 46 27	2 2 11 s	1		♏	14 4 16	1 2 3 s	4

This table shewing the mean longitudes of 60 stars to the beginning of the year 1780, their mean longitudes for any other time may be found if 50 $\frac{1}{2}$ seconds be added for each succeeding, and subtracted for each preceding year; and proportionably for a part of a year. Thus, to find the longitude of the first star ♈♏, or ♏ piscium, for Feb. 15, 1782, or 2 years and one eighth after the tabular time; here 2 $\frac{1}{8}$ times 50 $\frac{1}{2}$ sec. make 1' 47", which being added to the tabular longitude, gives ♏ 11° 6' 35" for the longitude required at the given time.—The latitudes vary not.

The Latitudes and Longitudes of Ninety Places.

	Lat.		Long.			Lat.		Long.	
	°	'	°	'		°	'	°	'
Alexandria, Egypt	31	11 n	30	17 e	Isfahan	32	25 n	52	55 e
Amsterdam, Hol.	52	23 n	4	52 e	Land's end	50	6 n	5	50 w
Archangel, Ruf.	64	34 n	38	30 e	Leghorn	43	33 n	10	25 e
Athens	37	40 n	23	52 e	Leostoff	52	38 n	1	54 e
Babelmandel	12	50 n	43	50 e	Leverpool	53	22 n	3	10 w
Batavia	6	12 s	106	45 e	Lima	12	1 s	76	50 w
Bengal	22	0 n	92	45 e	Lisbon	38	42 n	9	4 w
Berlin	52	33 n	13	26 e	Lizard	49	57 n	5	21 w
Bombay Isle	19	42 n	73	3 e	London	51	31 n	0	0
Boston, Amer.	42	25 n	70	37 w	Madras	13	8 n	80	7 e
Breslau	51	3 n	17	13 e	Madrid	40	25 n	3	45 w
Brest	48	23 n	4	30 w	Manila	14	30 n	120	25 e
Bristol	51	28 n	2	30 w	Marfeilles	43	18 n	5	21 e
Buenos Ayres	34	35 s	58	0 w	Mexico	19	54 n	100	5 w
Cadiz	36	31 n	6	7 w	Mississipi, mouth	29	0 n	89	17 w
Calais	50	58 n	1	51 e	Moscow	55	25 n	37	51 e
Cairo, Egypt	30	2 n	31	26 e	Naples	40	51 n	14	19 e
Cambridge	52	13 n	0	4 e	Newcastle	55	0 n	1	18 w
Canaria Islands	28	1 n	15	0 w	Oporto	40	53 n	8	35 w
Canton	23	8 n	113	2 e	Orkney I. northend	59	24 n	3	23 w
Cape of Goodhope	34	29 s	18	23 e	Oxford	51	45 n	1	16 w
Cape Horn	55	59 s	67	26 w	Paris	48	50 n	2	25 e
Carthegena	10	27 n	75	26 w	Pekin	39	55 n	116	22 e
Charles Town Am.	33	22 n	79	50 w	Petersburg	59	56 n	30	19 e
Constantinople	41	0 n	28	53 e	Philadelphia	39	57 n	75	18 w
Copenhagen	55	41 n	12	50 e	Plymouth	50	24 n	4	15 w
Corinth	37	30 n	23	0 e	Port Mahon	39	51 n	3	53 e
Corké	51	54 n	8	30 w	Port Royal, Jam.	17	40 n	76	37 w
Dantzic	54	22 n	18	36 e	Portsmouth	50	48 n	1	1 w
Dover	51	7 n	1	19 e	Prague	50	5 n	14	15 e
Dublin	53	12 n	6	55 w	Quebec	46	55 n	71	12 w
Edinburgh	55	58 n	3	1 w	Rome	41	54 n	12	32 e
Ferro, Isle	27	48 n	18	6 w	Scilly Isles	50	0 n	6	45 w
Finisterre, Cape	42	57 n	9	36 w	Smyrna	38	28 n	27	25 e
Genoa	44	25 n	8	41 e	Stockholm	59	22 n	18	12 e
Gibraltar	36	5 n	4	46 w	Syracuse	37	4 n	15	20 e
Glasgow	55	52 n	4	5 w	Tangier	35	55 n	5	45 w
Goa	15	31 n	73	50 e	Teneriff	28	16 n	16	32 w
Gottingen	51	32 n	9	58 e	Tunis	36	47 n	10	16 e
Greenwich	51	29 n	0	5 e	Turin	45	5 n	7	45 e
Hacluit's Head.	79	55 n	12	0 e	Venice	45	27 n	12	24 e
Halifax, America	44	46 n	63	20 w	Verd, Cape	14	47 n	17	28 w
Havanna	23	12 n	81	11 w	Vienna	48	11 n	16	28 e
Helena, I. St.	15	55 s	5	49 w	Upsal	59	52 n	17	43 e
Jerusalem	31	50 n	35	25 e	Uraniberg	55	54 n	12	52 e

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